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ABSTRACT

Methods for teaching parents techniques for stimulating audition and language development in their deaf infants were explored over a 3-year period. Families were seen individually at the University of Kansas Medical Center by teachers of the deaf. Techniques were demonstrated for the correlating of hearing and language development with home activities. Additional instruction was given to parents in large and small groups. Videotapes were used as one method of instruction and evaluation. Findings indicated the feasibility of videotaping as an objective evaluation method, while differences in subjective opinion and objective evidence of progress suggest a further need for pinpointing levels of change. Recommendations were made concerning procedures for parent education, sequence of instruction, and program content. (Author/KW)

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June B. Miller, Ed. D.
Hearing and Speech Department
University of Kansas Medical Center
39th and Rainbow
Kansas City, Kansas 66103

September 1, 1970

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The demonstration reported herein was performed pursuant to a grant with the Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official positions of the Bureau of Education for the Handicapped.

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Bureau of Education for the Handicapped

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SUMMARY

Methods for teaching parents techniques for stimulating audition and language development in their deaf infants were explored over a three year period. Families were seen individually at the University of Kansas Medical Center by teachers of the deaf. Techniques were demonstrated for the correlating of hearing and language development with home activities. Additional instruction was given to parents in small and large groups. Videotapes were used as one method of instruction and evaluation. Findings indicated the feasibility of videotaping as a method of objective evaluation. Differences in subjective opinion and objective evidence of progress suggest a further need for pinpointing levels of change.

A DEMONSTRATION HOME TRAINING PROGRAM
FOR PARENTS OF PRESCHOOL DEAF CHILDREN

Parent education is not new in this country. Prior to 1800 information on child care was disseminated to American mothers through importation from Europe. In 1880 Miss Sarah Fuller, principal of the Horace Mann School for the Deaf in Boston, systematically encouraged the teaching of language to deaf children by their parents, at home, prior to their entrance in school (DeLand, 1907). The founding of the John Tracy Clinic in 1942, followed by the initiation of the John Tracy Correspondence Course in 1943 (Tracy, 1959) marked the beginning of a period of continuous expansion of parent education for parents of hearing impaired children.

This is a report of a three year effort to demonstrate the feasibility of accelerating the language growth of hearing impaired infants through parent training. The purpose of the program was to establish and evaluate a model of a home teaching program. Specifically:

a. To explore methods for meeting the auditory and language needs for deaf children prior to the age of formal school training.
b. To investigate techniques for teaching parents in the demonstration and participation program, about hearing loss and practical methods of auditory and language training for their children.
c. To investigate the utility of new teaching techniques; the use of videotaping and filming as a method of parent instruction.
d. To cooperate with other centers in the development of effective methods for teaching very young deaf children and their parents.

Background

The multiple areas of knowledge that impinge on education of the hearing impaired at any age are compounded when the child is very young and parents are cast in the role of students in order to become their child's teacher. The development in infants and young children of hearing, listening, vision, language perception and cognition appear to serve as a basis for comparison of deviant behavior caused by hearing loss. The many special problems created by lack of hearing are related to 1) the etiology of hearing loss and the resultant damage to the hearing mechanism, 2) the effect on learning, 3) sensory deprivation, and 4) correlation between incidence of hearing loss and vision defects. The early diagnosis of hearing loss and the recommendation of hearing aids is related to the remediation as are the controversial areas of unisensory or multisensory teaching methods, speechreading and auditory training. Various theories are projected in many of these areas, and there is a continuing need for additional research.

Still to be explored also are the effects of various types of parent education programs on the parents and on the child.

Child Development

Learning Tasks

The child, himself, presents his own unique pattern of development and personality. The things which a young child is expected to learn during his first five years of life are categorized by Kawin (1963-b) into ten developmental tasks.

a. Becoming able to take solid foods and learning to feed himself.
b. Learning to see persons and things, to hear and recognize sounds, and feel objects.
c. Learning to control movements of eyes, head, shoulders, arms, trunk and legs; gradually becoming able to coordinate eye movements and the use of arms and hands in order to grasp, hold, throw and move things.
d. Learning to balance the body in order to sit, creep, stand, walk, and go up and down steps.
e. Becoming able to regulate the elimination of body wastes.
f. Learning to talk which must be accompanied by understanding of concepts. Developing mental abilities such as memory, reasoning, and problem solving.
g. Learning to relate to other persons.
h. Learning to relate himself to the world around him.
i. Learning that boys and girls are different and becoming aware of his (or her) own sex.
j. Learning to distinguish between right and wrong by moving from values based on his own satisfactions and discomforts to acceptance of parental standards.

Young children learn through imitation of models to which they are first and most steadily exposed--usually parents. The young child has little experience apart from his family. Children in the preschool years learn about themselves and their world through play. It is of tremendous importance in mental growth. The length of time a child can persist in a performance or concentrate upon a task varies with age. Two and three year olds are in a constant struggle between their need for help, their dependence, and their urge for independence. This reflects the child's expanding world as he reaches out in his contacts to other children and his neighborhood.

Language

The two to two-and-a-half year old may be heedless of verbal injunction if you ask him to go from one place to another, but if you go yourself he is likely to follow. Only through continuous motor pursuit and explanation of objects does the child of this age acquire the fund of experience necessary for a more mature type of visual awareness (Moylan, 1969). On the average there are from 250 to 300 words in the two-year-old's vocabulary. The three-year-old talks in sentences with 10 to 15 percent of his conversation consisting of questions. At four years, collective nouns and generalizing phrases emerge in speech. The five-year-old speaks without infantile articulation. As he listens he singles out special words in a spoken sentence and asks their meaning.

Lenneberg (1969) views language development as correlating most closely with motor development rather than chronological age. This holds true in many different societies, including some very primitive ones. Language also relates to the physical indications of brain maturation, such as the gross weight, neurodensity in the cerebral cortex or the changing weight proportions of given substances in either gray or white matter. Language begins when such maturational indices have attained at least 65 percent of their mature value. Inversely, language acquisition becomes more difficult when the physical maturation of the brain is complete at about 16 years. The correlations do not prove causal connections. Cortical specilizations for sensory functions and language production are not present at birth. If a disturbance in the left hemisphere occurs early enough in life, the right hemisphere remains competent for language throughout life. All languages have principles in which relations are being specified, that is, syntax. *The child first reacts only to intonation patterns. It is not* necessary to reproduce them. This changes him so that he reaches a new state, a new potential for language development and he becomes aware of certain articulatory aspects. Mysak (1961) too, related the development of language to the development of the organism.

In the linguistic view of language development large patterns of intonation develop before the child begins consciously to develop basic speech phonomes. Intonation denotes internal meaning; intonation denotes a question, a statement or an exclamation. Simmons (1966-b) identifies intonation patterns as the first acoustic aspect of language to be distinguished. Intonation patterns are related to the overall musical pattern of speech derived from pauses, accent, stress, juncture, and pitch as well as intonation. Accent distinguishes word usage when spellings are identical. Stress, the loudness and softness of speech, is used to escape ambiguity. Juncture utilizes combinations of pauses, changes in pitch and degrees of stress to mark sentence ends and phrases and clauses within sentences. This is observable in the emerging language patterns of infants who have no hearing impairment. Intonation patterns can be heard which have the form and time elements of sentences with only one understandable word throughout. Gradually more understandable words are heard within the same intonation pattern. Finally, the two-word sentence (Lee, 1966) is heard.

Hearing and Listening

Eisenberg (1970) calls attention to the lack of information concerning the development of hearing in man and outlines the currently available information as follows:

a. The cochlea seems to be functional by about the 30th week of intra-uterine life;
b. Basic mechanisms for coding intensity and frequency probably are operant by the 28th to 30th week of gestation;
c. Mechanisms governing attentive behavior may not be functional until some weeks thereafter;
d. Functionally differentiated channels for processing acoustic information according to the frequency and organization of a stimulus envelope probably are present at birth.

There is a strong argument for initially focusing on early life as a rational order of priority for developmental study.

Galambos (1958), working with cats, found that the attentive animal was characterized by large EEG responses spread throughout its brain, areas being included that ordinarily are not considered to be part of the auditory system. The inattentive animal shows responses smaller in size and in fewer brain locations. The variation in size occurs throughout the auditory system, being apparent even at the cochlear nucleus, the first synapse in the auditory system. Hernandez-Peon, Scherrer, and Jouvet (1956), working similarly, found that a visual stimulus introduced simultaneously markedly reduced the electrical discharge produced by a click stimulation.

McNeill (1966) noted nothing in the literature on learning the sound system of a language. Penfield's and Roberts' (1959) work contributed information concerning neural psychological aspects of memory. Simmons (1966-b) cites evidence that the brain, whether of the hearing or deaf, can learn to make use of all kinds of acoustic information and given the opportunity will organize the available cues into a system which will form an adequate basis for both the reception of speech and for its production. Hirsch (1966) states that the sounds of language are acoustic events and the distinctions among sounds are given by features that are the special properties of sound. The vowels have a higher intensity; consonants are distinguished on the basis of type of sound, duration and rate of build-up or decay. Any child with an average loss greater than about 50 decibels cannot hear ordinary speech at all if he is more than a meter away. An average speech level of 90 to 95 decibels is measured at about one inch from the talker's mouth. The sound level of ordinary conversational speech at a distance of about one meter from the talker averages about 70 dB. Blair (1969) structured auditory input into three sections:

a. Sensory contact, which included sensitivity to relevant sound frequencies and directional hearing;

b. Signal acceptance which includes listening set (attention) figure-ground choice, and acoustic analysis (discrimination);

c. Symbol association, which includes sequential simulation (temporal order memory) and semantic recognition (long-term memory).

Vision

Moylan (1969) documented the relationship between motor and visual development in human growth. At eight months there is a dawning awareness of distance and location and the baby localizes sights and sounds well beyond the reach of his arms. He listens and looks when he hears footsteps. Audition serves to reinforce visual "projections". At nine months he peers into peoples faces. At ten months he tips his head back to gaze upward. In the presence of more than one object, he manifests an awareness of more than one. He regards situations as a whole. The relationship of this maturation of vision to the conceptualization of speech visually remains to be explored.

Cognition and Perception

Fowler (1962) points out that there are two views concerning cognitive development, the biological and the behavioristic. The latter deals with operationally definable processes. Bloom (1964) holds that the child has gone 50 percent of the way toward establishing thinking patterns and organizing thought by the time he is four years old, and 30 percent more by the time he is eight. Hebb (1955) states that psychological development is fully dependent on stimulation from the environment. Dragostin (1968) believes that the degree to which particular cognitive processes are trainable and the degree to which others are not is a crucial issue in research.

In regard to early infant learning, Fowler (1962) suggests that conceptual learning set, habit patterns, and interest areas may well be more favorably established at early rather than at later stages of the developmental cycle. McGee (1969) states that the developing perceptual system of the deaf infant which determines his later communicative preferences and abilities becomes related to the current life style of the child whether he is two weeks old or two years old.

Hearing Impairment

Measurement

Hearing loss adds another dimension. A child's hearing loss can be sensorineural, conductive or a combination of the two. Yet Rosenberg (1966) writes of the difficulties of correct diagnosis at an early age. Moncur's (1968) study showed that audiologists are slightly more consistent than laymen in judging responses of eight-month-old babies to auditory stimuli. Current attention is directed to evoked response audiometry which uses computer analyzed cerebral responses to determine auditory thresholds. McCandless (1967) and others record its use but Price (1969) outlines some recurring problems with its present usage while stating that additional research can enhance understanding of the technique and perhaps allow improved clinical applicability.

Etiology of Hearing Loss and Damage to Hearing Mechanism

Various etiologies present damage at varying points along the auditory pathway. Watson (1961) states that there is increasing difficulty in discrimination of speech as the seat of the damage moves from the end organ to the auditory cortex. Hardy (1958) believes that evidence of central auditory disorder rather than peripheral, calls for a mild-gain hearing aid which functions largely as an attention getting device. deSa (1958) states that nasal sounds (an, en, in, on, un,) are normally lost in central deafness while the /s/ is well perceived; in addition there is a great recurrence of mistakes of certain consonants such as /t/ for /d/, /d/ for /t/, /f/ for /p/, and /p/ for /t/. In cochlear deafness the /s/ is not well perceived. Aten (1968) and others have written of temporal ordering difficulties and reduced attention which contribute to psycholinguistic problems in language learning.

Hearing Aids

There are two major areas of controversy which center around the wearing of hearing aids by hearing impaired infants. One is the use of hearing aid amplification prior to the time it is possible to achieve accurate diagnosis; the other is the use of nonaural or binaural hearing aids. Frequently listeners report improved listening through binaural fitting of hearing aids. Various research studies have failed to substantiate this reported effect. Dirks and Wilson (1969) have recently demonstrated on listeners with sensorineural hearing losses a difference in binaural listening of 3.3 decibels.

Impaired Hearing and Vision

Vision offers an alternative pathway to learning for the hearing impaired. Suchman (1969) investigated the visual status of 100 deaf children, ages four to 12 years, and found that only 43 percent of the children had normal vision compared to 30 percent in children with normal hearing. The cochlea and retina are reported to be formed at the same developmental stage from the same embryonic layer.

Impaired Hearing and Speech

The most observable result of hearing loss is the lack of speech development. From four to eight months the hearing baby crows and vocalizes eagerness. It is at this early age that the absence of a monitoring system for sounds become apparent in the hearing impaired baby. His vocalizations are reduced in range and amount after the age of six months. He ceases to follow the normal language developmental pattern (Boone, 1965; Lee, 1966).

Sensory Deprivation

The lack of hearing deprives the developing child of some or all audition input. Bruner (1961), views early sensory deprivation as robbing the organism of the opportunity of constructing models of the environment and preventing the development of efficient strategies of evaluating information. It then becomes more difficult to utilize probable rather than certain cues. Later sensory deprivation disrupts the continuing feedback-evaluation system which is a principle source of maintaining adjustment forcing the individual to live with his own inner impulses and cognitive models. Levine (1960), working with animals, found that "it is apparent that the character of early infant experience is another important determinant of individual differences....", but points out that the critical elements in the stimulation procedures have not been identified nor have the critical infantile period (or periods) been established. Elliott and Vegely (1968) tested 252 children in a state school for the deaf and found no verification for the hypothesis that early sensory and educational deprivation produces learning disability, but mentioned the lack of a control group for which consistently appropriate sound amplification and educational procedures were experienced.

Remediation Measures

Sensory Channels

A direct correlation between educational achievement and early training has long been assumed and is supported by the study of Elliott and Armbruster (1967) and others.

Gaeth (1969) and others have studied the effects of unisensory and multisensory inputs to normal and hearing impaired students. Hsia (1968) points out the importance of knowing the fundamental differences of information processing of the auditory and visual channels. The auditory channel is temporal in nature, allows sequential presentation, has poor referability, is more flexible in absorbing connations, nuances, and inflections; the rate of transmission is limited to the speaking rate and it is less versatile, more attention demanding and more resistant to fatigue. The visual channel is spatial in nature, allows both sequential and simultaneous presentation, has good referability, allows a much faster rate of transmission, has greater versatility, is less attention demanding and is less resistant to fatigue. Both modalities are subject to the ultimate restriction of the central nervous system. Hsia concludes that the studies which have found that either the audio or visual channel is more effective have a) failed to take into account the capacity limit theorem and redundancy, and b) failed to differentiate error and equivocation. D. B. Lindsley (1961) suggests that the ascending reticular activating system (ARAS) is differentiated in its responses to different sense modalities and being located at the crossroads of input and output systems samples and monitors all such activities. In doing so it becomes adjusted or tuned to certain levels of activity and its own response level is projected upon the cortex where it influences perception and learning and probably emotions.

Speech has visual attributes which can offer clues to the understanding of language. Frisina (1966) cites various studies with deaf children as subjects showing that speechreading as a coding technique for the brain offers about 50 percent efficiency for unselected speech materials; the use of the acoustic channel increases efficiency from a linguistic point of view from 55 percent to 85 percent. The study of Taaffe and Wong (1957) regarding the visual conceptionalization of speech (speechreading) determined that sentences and paragraphs were easier to speechread than single words. Bergendoff (1968) using preschool children as subjects, found they had difficulty in learning to speechread single words.

The Parents

Research in Parent Education

Parents add another variable to the many so far discussed. Regarding all parent education Brim (1955) states that the "research on the whole has demonstrated that some programs 'have affects' and some programs have none, but attention has not been given to the kind of clientele involved, to the content transmitted, and to specification of the technique itself." Attempts have been made by Schaeffer and Bell (1958) and others to measure attitude changes in parents. Plutchik and Kronovet (1959) pointed out the difficulties of attitude measurement.

Types of Programs

Various programs utilize individual counseling, (Rogers, 1942), group therapy, (Smith, 1948), workshops, (Kawin, 1963), individual instruction and group lectures as types of parent programs. Parent Institute, a week-long program of the University of Kansas Medical Center and the Kansas School for the Deaf, combines examinations of the hearing impaired child and instructions for his parents (Miller and Miller, 1959).

Parents of the Hearing Impaired

The role of parent education for parents of hearing impaired children is twofold. First, they must be helped towards solutions for their own and their child's problem. Shontz (1965) describes the predictable course of anxiety following a life crisis, such as finding that your child has impaired hearing. Secondly, parents must be made fully aware of their own importance as teachers (Omer, 1963).

The effectiveness of the parent in the parental role is the underlying structure upon which is superimposed the new role of the parent as a teacher at the conscious level. Kawin (1963-a) established six basic areas essential for the parenthood role. These are a) security and adequacy, b) understanding of self and others, c) values and goals, d) problem solving attitudes and methods, e) freedom, discipline and responsibility, and f) constructive attitudes toward change. The attributes of the parent, their interaction with the child, and the interaction within the family constellation are all variables which bear upon the learning task but are largely undefined.

Learning Methods

The parent suddenly thrust into the role of student is different than the student who is motivated to formally enroll for instruction. O. R. Lindsley (1968) applied operant conditioning principles in training parents and teachers to manage children's behavior. Dale (1954) provides a hierarchy of eleven levels of experience moving from the most abstract, verbal experience, to the least abstract, direct purposeful experience. Salomon and Snow (1968) state that a theory is needed that predicts and explains interactions between characteristics of learners and attributes of communication media. Media attributes should first be described in structural terms and then translated into functional ones which link them to psychological processes. Both psycholinguistics and information theory begin with the stimulus material and seek a description of its effect on the person exposed. The former assumes the existence of common language structure while the latter addresses itself mainly to the quantity of information presented.

Ewing (1963) reports parent home training programs in connection with schools for the deaf and partially hearing in England. There are also programs for parents in other European countries. In the United States the John Tracy Clinic in Los Angeles, Vanderbilt University in Nashville (Horton, 1968), Emerson College in Boston, (Luterman, 1967), and Central Institute for the Deaf in St. Louis (Simmons, 1966), have parent training programs.

In summary, the attributes of the child, including his development, personality, and hearing loss are the central force in an early learning program. Peripheral is the ability to assess these attributes and the prosthetic devices provided. Teaching parents to become their child's teacher establishes a triangular relationship that involves the individual attributes and abilities of each member of the constellation--the child, the parent, and the instructor. Included within the relationship are factors of sensory deprivation, teaching and learning.

Procedures

The project began April 1, 1967, in a house across the street from the Children's Rehabilitation Unit of the University of Kansas Medical Center. The location was changed to the lower floor of a duplex a half-block east of the Unit when the original house was demolished to make way for the expansion of the Medical Center. In both locations the area available for the project included a living area, dining area, bedroom, kitchen and bath. The furnishings were donated from the community and refurbished, creating a home-like atmosphere.

During the three years, the project was staffed by one full-time, and several part-time teachers of the deaf. All held degrees from teacher training institutions. The services of an audiologist were available throughout the project. Psychological services were also available. An executive secretary completed the staff.

Children were referred to the project from the Ear, Nose, and Throat, Birth Defects, and Pediatrics Departments within the University of Kansas Medical Center. In addition, children were referred by other physicians within the Greater Kansas City area and within a 250 mile radius of that area. Each potential candidate was evaluated by a staff member (teacher of the deaf) of the L. B. Spake Hearing and Speech Department and if appropriate was then referred along with his parents, to the project. The name established for the project and the setting was The Parent-Home Center.

Initial contact with the family was made by the assigned teacher of the deaf, by telephone if possible, or by letter, and an initial appointment arranged. Both parents were strongly urged to participate. At the time of the first visit, a) orientation concerning the project was given, b) an information questionnaire given (see Appendix), and c) appointments were arranged with the project audiologist and psychologist. During the last eighteen months of the project, the teacher and child, and parents and child were videotaped in a short segment at this time. The interval between visits to the Parent-Home Center varied according to the needs of the family, primarily on the basis of the distance from the family home. For those in the Greater Kansas City area, appointments were usually weekly; for those who had to come a greater distance, appointments were bi-weekly or even monthly.

An audiologist was employed on the grant whose time was devoted to testing of children specific times each week. He routinely:

a. Tested all children referred to the program, some repeatedly, over a period of time, until a reliable audiogram was obtained.
b. Evaluated the child's performance with a hearing aid and made recommendations accordingly.
c. Re-evaluated the child's performance after a period of hearing aid use as it related to gain setting and tolerance.
d. Conducted parent conferences to explain the loss, gain with the aid, and how to use it. He was also available when a question of faulty operation of the aid arose.
e. Rechecked child when indicated, i.e., following illness, reported changes in hearing, et cetera.
f. Participated in exchange of information with the child's teacher concerning loss, aid, and progress.

Instruction

Parents

Individual: Major emphasis was focused upon individual instruction of each family constellation. Initially, attention was directed toward teaching the child to respond to sound.

Repeated visits to the audiologist were scheduled in order to determine the amount of the child's residual hearing. Once this was determined and the audiologist recommended a hearing aid, attention was directed to giving the parent/ parents information about the mechanism of the hearing aid; instructions and assistance on habituating wearing of the aid and the specific steps in helping the child learn to listen with his new hearing aid were also given. Materials were developed by the staff which served as a guide for parents concerning usage and maintenance of the hearing aid (see Appendix A).

Throughout the project the staff focused on helping the parent(s) become the child's teacher in the home setting. The purpose of the visits to the Parent-Home Center was to assess the parent's progress in that role and to give additional information. Teacher-child relationships were usually for the purpose of demonstrating to the parents procedures which could be utilized in the home.

Stress was placed on implementing the child's understanding of language and secondary importance was given to the expressive aspects of language, since it follows sequentially in the hierarchy of language development. Two aspects of stimulating the child's understanding of language were presented: 1) learning to listen (with a hearing aid if recommended) and 2) the parent talking to the child. The expressive aspect of language (speech) was stressed through helping parents recognize and applaud beginning speech efforts such as breath, voice and vowel utterances.

Parents were helped to become aware of matching their language to the actions or objects which the child was observing to assist him in doing the auditory and visual matching necessary for language development. The language, itself, was that usually heard by all infants and preschool children; the language of the home, the neighborhood and the community.

Examples frequently given were "Here's your milk", when handing the child a glass of milk, or "Open the door", before doing so, or "Let's put it on the table", when setting the table.

The visual components of speech were presented and assistance given the parents in habituating the child's observing the mouth of the speaker. Three methods presented for getting the child to watch were 1) getting down on his level, 2) hold an object by the mouth of the speaker, and 3) momentarily arresting the action of the speaker until the child looks. An example of this latter method is to momentarily hesitate when placing the child's plate of food on the table before him until he looks to see why the action isn't completed and then saying, "Here's your food."

Instruction to the parents concerning auditory training were varied according to the child's residual hearing and ability to make use of a hearing aid. Parents were helped to understand the circumference of distance and direction from which the child could be expected to make use of his residual hearing. With some variance the primary method of auditory training was to begin with the child's threshold for sound and proceed from identifying gross sound differences to finer and finer discriminations with the objective of differentiating the sounds of speech.

Parents were encouraged to express appreciation of the child's use of his own voice. This might be random vocalizing, babbling vowel patterns, imitating speech patterns, imitating sentence patterns, or saying single words.

Although information on various aspects was categorized and presented in separate segments to clarify instruction, the final objective was the integration of all aspects to be used casually in the home setting. (See page39 for recommended procedures.)

The background, training, and personality of the various teachers brought variation to the basic aspects of the program as described above. Some who had extensive backgrounds in psychology and counseling utilized this information and integrated it into individual sessions. Some introduced an element of objectivity by helping parents pinpoint, count and chart behavior followed by introduction of new elements calculated to increase desired behavior (see Appendix).

Videotaping was used in two ways. At some sessions a parent, after receiving instruction, was videotaped with his/her child while they were both involved in some home-type activity. The tape was then played back and parents could view themselves in interaction with their child. This afforded them an opportunity to observe themselves implementing the techniques which they had had an opportunity to learn. Some parents were critical of their own performance. The videotape was also used for evaluation, (see page 22).

Group: Two types of group programs were offered during the project.

a. Small groups, consisting of three or four families, were formed when it appeared to be the most feasible means of continuing educational acceleration.
b. Each month, group learning sessions were held for parents to further their insight into the basis for

remediation procedures.

At the beginning of the project in April 1967, all families received instruction on an individual basis. As the project continued, however, it was necessary to develop other forms of parent education as solutions to problems which emerged.

The formation of small parent/child groups seemed to yield a solution to these problems. Two types of groups were developed during the three year project, each for different, but specific, purposes.

The first group was organized in March 1968, with four mothers and their children. The reasons for its formation concerned both the parents and the children:

a. Some families with children older than three had entered the program only because there was no school placement available for their child within the community at that time. The groups offered learning experiences which seemed to be more appropriate. It also provided the mothers with skills in working with several children so that, after some supervised guidance, they could initiate such a program in their own home if educational facilities were lacking.
b. Some parents progressed to such a degree of proficiency and skill in working with their child that group activities offered an opportunity to gain additional and more varied skills.

For the mothers the purposes of the group were as follows:

a. To provide an opportunity to see how other hearing impaired children functioned.
b. To provide an opportunity to interact with hearing impaired children other than their own child.
c. To provide exposure to the underlying similarities and differences imposed by a hearing loss.
d. To provide an opportunity to approach teaching from an academic standpoint.

For the children the purposes of the group were as follows:

a. To provide opportunities for socialization.
b. To provide an opportunity for learning in a group-type setting.
c. To provide an opportunity to speechread other adults.

Prior to their participation in the group, one family had attended as few as nine individual sessions while another family had had as many as 17 individual sessions.

At the time of the first group session in March, the youngest child was two years, eleven months of age, and the oldest child was three years, six months of age.

Three families lived within the Kansas City area. The fourth mother and child drove a distance of 100 miles each week for the session.

The group functioned for a total of nine sessions, concluding in July 1968. Each session was one-and-a-half hours in length. There was one additional meeting which occurred between the fourth and fifth session. During that meeting the supervising staff member discussed the progress of each parent and child as well as the group.

The structure of the sessions was as follows:

a. The mothers functioned as teacher. Each mother was responsible for preparing one activity for each session. In addition, each mother prepared a "lesson plan" which was given to the staff member and included language principles, sound stimulation, child involvement, materials to be used and parent assignment.
b. The role of the Parent-Home Center supervising teacher was to provide feedback, to offer specific suggestions and to offer the parents encouragement and priase.

The group did not resume in September 1968, since the three children who lived in the Kansas City area were placed in a preschool program for the hearing impaired.

In February 1970, a second type of parent group was organized at a time when there were a number of families waiting to enter the program. A partial reorganization of the existing program was necessary if these new cases were to be absorbed into the program. The alternative solution to the problem of a shortage of personnel would have been to discontinue families on the basis of length of enrollment in the program. It had been noted that some parents were able to achieve an acceptable level of success in utilizing techniques after receiving individualized instruction for six months. Other parents were able to intellectualize or verbalize the techniques, but were not able to effectively utilize them within that period. Based on the criterion of having received individualized instruction for six months, nine families were considered for group participation. Three groups were created based on the functioning level of the parents. There were three sets of parents in each group. Groups I and II consisted of parents who were able to effectively use the techniques with their children, for each child showed the effects of such procedures. Group III was comprised of parents who had not been able to incorporate the use of the techniques with their children. Thus, the objectives for each group were different because of the various levels of functioning among the parents.

The age, level of functioning, and the hearing loss of the children in each group at the time of the first group session was as follows:

a. Group I
   Ages - one year, six months to two years, two months
   Hearing losses - profound, fragmented
   Linguistic level - babbling and single word responses primarily on an imitative basis.
b. Group II
   Ages - two years, ten months to three years, seven months
   Hearing losses - severe
   Level of functioning - single word responses on a spontaneous basis and a limited number of two-word constructions, both imitatively and spontaneously.
c. Group III
   Ages - two years, eleven months to five years, one month
   Hearing losses - severe and profound
   Level of functioning - babbling and single word responses primarily on an imitative basis.

One teacher was assigned to each group. An attempt was made to assign to a group a teacher who had individually worked with as few of the parents within that group as possible. It was felt that a teacher, different from the one the parent dealt with on an individual basis, might be able to offer new insights into the use of techniques.

The objectives for the groups were as follows:

a. To change learning from an individual to a group basis.
b. To develop parents' insight into problem areas.
c. To provide an opportunity for parents to be supportive, as well as critical, with each other in the use of techniques.
d. To allow for meaningful positive and/or negative criticism by other parents rather than a teacher.

e. To provide an atmosphere conducive to the discussion of personal problems.
f. To provide an opportunity for parents to observe the behavioral problems of other hearing impaired children and to note the similarities and differences among them.

Additional objectives for Group III were:
a. To provide each parent with an opportunity to become an active participant in discussing the techniques and stating the rationale for using them.
b. To provide an opportunity for reemphasizing and clarifying the parents' understanding of the techniques.

The groups met for a total of 12 sessions. The mothers were present for all sessions. In Group I, two fathers attended one time; the third father did not attend any sessions. In Group II, one father attended one time; another father attended once; the third father attended nine sessions. In Group III, one mother was divorced; no fathers attended any of the sessions.

The organizational format of the groups was as follows:
a. Each group met for a minimum of one hour, once a week, for three weeks of each month. During the fourth week, each parent met with his original teacher for individualized instruction.

The group members functioned as below:
a. Each week one of the three mothers or fathers demonstrated an activity of her/his choice before the group. The activity was performed with her/his child.
b. Each week one of the mothers who was not demonstrating acted as the group leader, during the group discussion that followed the demonstration. This responsibility was rotated each week among the participating parents. Staff members did not act as group leaders.
c. During the sessions the staff member dispersed a rating scale (see page 18) and acted as a consultant by providing any technical or academic information. He videotaped the parent demonstrating the activity for the group. Following each session, the staff member revised the rating scale whenever the group members deemed it necessary. He also wrote detailed reports on the demonstrating parent's abilities, on individual parent participation, on parent interaction, and on the child's behavior and functioning.

The group procedures followed the following format:
a. Parents were given rating scales at the beginning of

the session.

b. The demonstrating parent performed an activity that was videotaped.
c. Replay of the videotape was observed either immediately following taping, during/or following the discussion.
d. Parents recorded their initial rating of the demonstrating parents performance.
e. After rating, the parent group leader guided the other parents through the items on the rating scale. The discussion centered around the parents rationale for rating.
f. In some groups the discussion concluded with suggestions to the demonstrating parent regarding technique, future focus, et cetera.

The rating scale (See Appendix A) that was used had been previously devised by one of the teachers for the purpose of evaluating parent performance. The rating scale consisted of approximately 20 items pertaining to the parent's effective use of techniques for hearing impaired children. Each item could be rated on a seven point scale ranging from (1) indicating "Least Effective" to (7) indicating "Most Effective". A summary rating was also included to denote the parents overall performance, i.e., his overall "Effectiveness". The scale was adapted for use with the groups by having the parents in each group revise the scale. In the final form, the scales represented the particular level of functioning of each group, thus providing a scale that was more meaningful to each group member.

The disposition of the groups varied. At the writing of this report, Group I continues to function until the children are absorbed by a preschool program for the hearing impaired. Groups II and III terminated at the end of May 1970. In June 1970, the three children in Group II were placed in a preschool class at the University of Kansas Medical Center, and each child in Group III began individual tutoring in the Hearing and Speech Clinic at this Medical Center.

Group-parents: The goals of the total group learning sessions for parents only were as follows:

a. To give insight into the hearing impaired child's problems.
b. To deepen understanding of the rehabilitative processes.
c. To provide a format for mutual support by creating opportunities for verbal interchange between parents (Mandelbaum), and to give information concerning the parental role.

The parents were classified as a non-student population since they neither legally were required nor did they voluntarily enroll as students. Because of these factors particular attention was directed to methods of learning as well as content material. There was an effort to keep verbal information at a minimum and instead to use other means of providing information that were less abstract (Dale, 1969).

Group meetings in the initial years of the project were held on a once-a-month basis in the late afternoon. Parents were required to come. Because of limitations of space, no provisions could be made for the children. An attempt was made by the staff to cover, in the interval from September to June, the following topics:

Linguistic age: a) receptive, b) expressive
Auditory input
Visual input
Creating concepts by auditory and visual matching
  plus speechreading
Speech
Syntax
Sequencing

To help parents gain insight into the total background of pertinent information, a brief overview of all information was presented at the initial fall meeting.

Staff orientation was toward a partnership with parents rather than a pupil-teacher relationship. Therefore, parents were strongly encouraged to voice their concerns and criticisms regarding the meetings. A formal method of achieving feedback from them was established by asking for an unsigned written evaluation from each parent at the close of each meeting. Through this same medium, parents were encouraged to ask questions if they were not voiced during the meetings. A staff member responded to the questions at the beginning of the following meeting. The comments and criticisms along with verbalized comments, were considered in planning subsequent meetings. One example of parent-input which affected a change in programming was the high interest in behavior management of children; another, was the uniformity of interest in subsequent schooling.

The staff-compiled topics for parent programs were the following:

a. Overview
b. Audition + visual language symbols + sensory experience, repeated as often as necessary, equals

language concept storage $(A + VLS + SE)_n = LCS$.
   - c. Hearing aids and auditory training
   - d. Vision and speechreading
   - e. Matching language with ideas
   - f. Concepts + breath + articulation = speech ($C + B + A = Sp$)
   - g. Speech and grammar system = sentences ($Sp + GSs = Sn$)
   - h. Experience stories

The concept of spiral learning was employed throughout the years parents were in the program with the same basic ideas being presented in different formats and from different view points.

The methods employed in imparting information included group and sub-group participation in buzz groups, forums, round table discussions, and games. Opportunities were created for audience participation. Demonstrations were given by parents as well as teachers. Skits were presented and exhibits arranged. Only when lectures appeared to be the most feasible way of presenting material was this form of presentation utilized. Sample meeting agendas are found in the Appendix.

Adjuncts to the meetings were various materials provided for the parents. Sometimes these were mailed to parents prior to the meeting day to provide background information for the meeting itself. An example of this was programmed learning on the Anatomy of the Ear and the Measurement of Hearing mailed prior to a meeting on auditory training. Sometimes information was supplied at the request of the parents such as a summary of the lecture on "Procedures for Becoming Better Parents." Current lists of available special schools were provided each year; and a set of instructions for separate amplification through headphones for the audio portion of television were available on an on-going basis. Frequently, in an attempt to meet the individual differences of the parents, additional materials were made available.

Careful provision was made within each meeting for time for free interchange among the parents with no staff interference.

Two types of small group meetings for parents only were attempted during the course of the project. Parents, both fathers and mothers, were given leadership training (Kawin, 1963-a) in leading group discussion. Suggestions for leaders were solicited form the entire group and those chosen were invited to participate in a leadership training workshop. Interested parents from the parent project were invited to enroll on a volunteer basis. Twenty-three parents did enroll. Material was provided concerning the role of parenthood. Books were provided and the same material was summarized through correlated tape recordings and transparencies to be shown on an overhead projector. A father and mother acted as group discussion leaders. Group members participated in presenting material and in discussion. This material did not allude to hearing impairment, but to child rearing. Written comments were solicited from the group at the final meeting (eighth session). Questions asked were 1) what did you like most about the meetings, 2) what did you like least about the meetings, and 3) how would you improve them?

The second type of small group meeting for parents only, included three or four mothers whose children were participating in small groups as an interim step between the private appointments of the Parent-Home Center project and the preschool. These groups met for a total of four sessions only. The staff member was non-directive in the leadership role and discussion tended to center around child-rearing problems.

Children

The child accompanied the parent or parents to each individual session. The parent(s) and child demonstrated home activities as they were implemented in their own home. The teacher sometimes used the child in a demonstration as a teaching method for the parents.

The child was videotaped with his parent(s) a) as a visual method of teaching the parents, and b) as an evaluative measure.

Reporting and Recording

Initial, quarterly, and final reports were written by the teacher on each family and distributed as follows:

a. Hospital chart, University of Kansas Medical Center
b. Referring doctor
c. Child's pediatrician (initial and final report only)
d. Audiologist

Upon the parents request, reports were forwarded to schools and other agencies.

An information questionnaire was developed (see Appendix A) and given to each family to obtain a record of pertinent information. Case summary information was recorded on a Master File Sheet (see Appendix A). The staff developed individualized methods for recording weekly case information. (See Appendix A.)

Families were retained in the program for one year or until the child reached three years of age.

Evaluation

In the initial year of the project the following measurement instruments were used as evaluative measures:

Child

Vineland Test Social Maturity (Doll, 1953)

Boone, Infant Speech and Language Development (Boone, 1965)

Watson & Pickles Language Development Scale

A per-minute rate of the child's looks" at the speaker's mouth was computed by systematically counting each "look" for ten minutes. Counting was done with a golf-stroke-counter or similar device. A timer was used for accurate timing.

Parent

Subjective evaluation was made by some teachers according to Shontz's scheme of levels of anxiety (1965).

In the second year the Preschool Attainment Record (Doll, 1966) replaced the Vineland test as a measure of social development. The Boone, Infant Speech and Language Development, as well as the Watson and Pickles Language Development Scale continued to be used. Teachers in the project developed charts to be used as check lists for noting progress (see Appendix).

In April 1968, a videotape recorder was purchased. The staff developed a standard sequence to follow when videotaping the child, as well as the child and his parents, as a method of noting progress (see Appendix).

In the initial segment the teacher and the child were filmed. An attempt was made to illustrate the child's ability to a) respond to sound, b) speechread, c) understand language, and d) speak. Standard items were used. Items used for the "response to sound" sequence were a drum, a large "clicker", a small "clicker", a baby rattle, and pictures. Items used in the speechreading sequence were a shoe, doll, car, doll clothes, and pictures. Pictures were used in the speech sequence.

In the second segment the parent and child were filmed. The parent was instructed to bring something to eat or something to do. No other instruction was given. During this sequence a loud noise was initiated, at least once, by someone outside the child's and mother's range of vision. An attempt was made to videotape this sequence every twelve weeks during the families tenure in the program.

To obtain objective measurement of progress a method of scoring was devised using scoring sheets, one for the teacher/

child sequence and another for the parent/child sequence (see appendix). Scoring Sheet I was used by videotape viewers who checked those items which the child "passed" on 1) response to sound, 2) speechreading, and 3) speech. Scoring Sheet II was used by viewers to compute a difference score in percent between 1) the number of times the child looked at the parent's lips and the number of times the parent spoke, and 2) the number of sounds that occurred during the filming sequence and the number of times the parent called attention to sound. Only those sounds initiated by staff members during the filming sequence were labeled "sounds that occurred". Graduate students in the deaf education program at the University of Kansas Medical Center participated as viewers. Mechanical timers and counters were used by the viewers on section one of Scoring Sheet II.

Dissemination of Information

Information concerning the project, with accompanying pictures, was published in newspapers in 33 cities in Kansas, and in the states of Wisconsin, Texas, Oklahoma, Oregon, Iowa, North Carolina and Minnesota.

Inquiries concerning the project and requests for materials were received from Salem, Oregon, Austin, Texas, the Southern Regional Media Center for the Deaf, Knoxville, Tennessee, Kent State University, Kent, Ohio, California School for the Deaf, Berkeley, California, the Atlanta Speech School, Atlanta, Georgia, the Regional Diagnostic Clinic, Hannibal, Missouri, and Ball State University, Muncie Indiana.

The project has been visited by graduate students from the University of Utah, University of Iowa, University of Nebraska, University of Arkansas, University of Missouri at Kansas City, University of Wisconsin at Milwaukee, members of the Child Growth and Development Section and members of the Speech Pathology and Audiology section of the University of Kansas. Some of the students in deaf education, speech pathology and audiology from the University of Kansas Medical Center did practice teaching and observed in the Parent-Home Center.

Former graduate students of deaf education of the University of Kansas Medical Center have incorporated aspects of early infant training in their current teaching programs. A similar program is being instituted at the Kansas School for the Deaf, Olathe, Kansas in 1970. Similar training is being offered parents by a teacher in the public schools of Topeka, Kansas.

Other visitors have been a speech pathologist from Brooklyn, New York, a consultant of the Polk County Board of Education, Des Moines, Iowa, and a demonstration preschool teacher from the University of Missouri at Columbia.

Staff members presented panels to a) the post-graduate regional conference on Hearing and Speech, University of Kansas Medical Center, and b) the Greater Kansas City Speech and Hearing Association. Individual staff members presented information to a) the National Convention of the Alexander Graham Bell Association, b) the Northeast Kansas Chaper of the Council of Exceptional Children, c) the Advisory Committee, Mountain Plains Regional Center for the Deaf-Blind, e) the Board of Sponsors, Children's Rehabilitation Unit, University of Kansas Medical Center, f) Career Day, Shawnee Mission Public Schools, and g) Women's City Club of Kansas City, Missouri. A paper will be presented at the International Conference on Deaf Education, Stockholm, Sweden, in August, 1970. A panel will be presented at a national meeting of the American Speech and Hearing Association on November 20, 1970.

Requests for project material have been received from Philadelphia, Pennsylvania and Louisville, Kentucky.

Interdepartmental Cooperation in Research

The following projects (see Appendix B) were completed utilizing the population of the parent project:

Author	Title	Department
Lane, Dorothy	Interviews with Parents	Psychology
Munger, E. M.	Sleep Habits, Problems and Management of Preschool Children	Education
Angel, Lynne	Behavior Modification of a Hearing Impaired Child	Education
Angel, Lynne	Procedure a Parent Might Use with an Exceptional Child	Education
Hoover, Lou	Teaching Behavior Modification Techniques to Parents of Hearing Handicapped Children	Education

Cooperation and Consultation

Cooperation was maintained with other similar centers during the project. A week of observation was scheduled for two teachers at the John Tracy Clinic, Los Angeles, in January, 1968. Both Dr. Lois Elliott and Dr. Audrey Simmons of the Central Institute for the Deaf, St. Louis Center, and Mrs. Kathryn B. Horton of the Bill Wilkerson Hearing and Speech Center, Nashville, Tennessee, were consultants to the project. The project director, two staff teachers and the audiologist participated in the conference on early infant training at the Bill Wilkerson Hearing and Speech Center in June 1968. Additional consultation was given by Dr. Kevin Murphy of the Royal Berkshire Hospital, Redding, England, and Kathryn O'Connor of the Alexander Graham Bell Association.

Findings and Analysis

Data was assembled and analyzed on the attributes of the child, determination of the hearing loss, rehabilitation procedures, subsequent educational placement and parent education. Information was derived from records, parent's replies to questionnaires, parent's written comments, videotape recordings and staff comments.

A total of 113 children were referred to the project for service, 12 of whom failed to enter the program. Four attended one session only, and six attended from two to four sessions. Of the 101 who entered the program, 47 were boys and 54 were girls. Reasons expressed for not entering the program included placement in another program, lack of transportation, and financial losses incurred for lost work time.

The birthdates of those children who entered the project are listed in Table 1.

Table 1

Birthdates of Hearing Impaired Children
by Months and Years

	1963	1964	1965	1966	1967	1968	Total
Jan. Feb. Mar.	1	0	8	5	2	1	17
Apr. May. June	0	2	6	2	2	0	12
July Aug. Sept.	1	6	3	7	0	1	18
Oct. Nov. Dec.	3	35	6	3	6	1	54
Total	5	43	23	17	10	3	101

The high rate of births that occurred during the last trimester of 1964 reflects the rubella epidemic of that year.

The etiologies of the hearing losses are presented in Table 2. This data was assembled from responses of the parents and from medical reports.

Hearing losses due to rubella comprise approximately 44 percent of the total population. Thirteen of the children were multiply handicapped. Twenty nine of the rubella cases were born in the period from October 1964, through January

1965. Of those classified as unknown, nine had birthdates in the quarter of 1964 which saw the high incidence of rubella births, (see Table 1).

Table 2

Etiology of Children's Hearing Losses

Reported Etiology	No. Cases
Congenital and Hereditary	
Familial	3
Waardenburg	4
Rubella	44
Acquired	
Rh	5
Meningitis	10
Unknown	35
Total	101

Tables 3, 4, and 5 present information on the age the hearing losses were confirmed, as reported by the parents or verified by audiological reports.

Table 3

Age in Months of Children 0-1 Year When Hearing Loss Confirmed

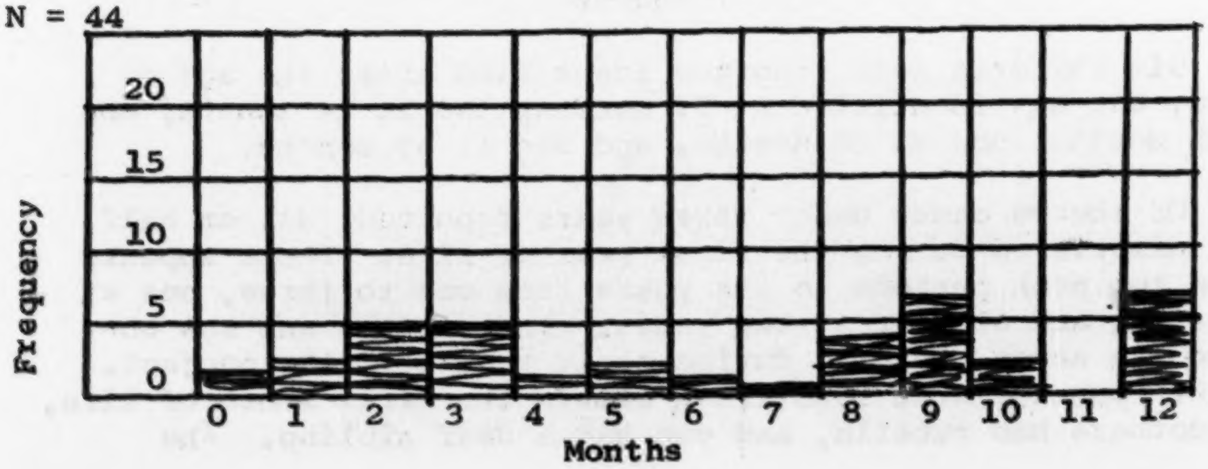


Table 4

Age in Months of Children 1-2 Years
When Hearing Loss Confirmed

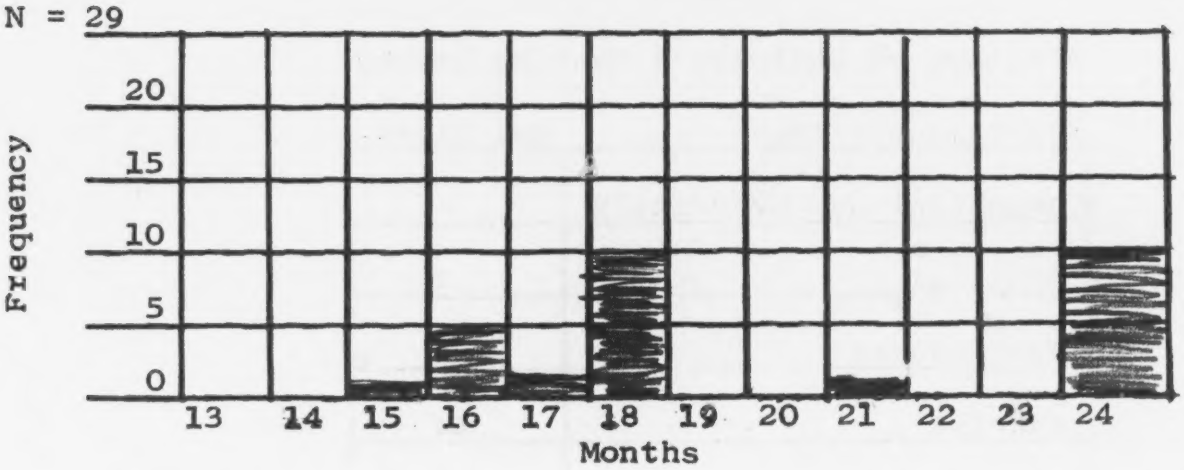
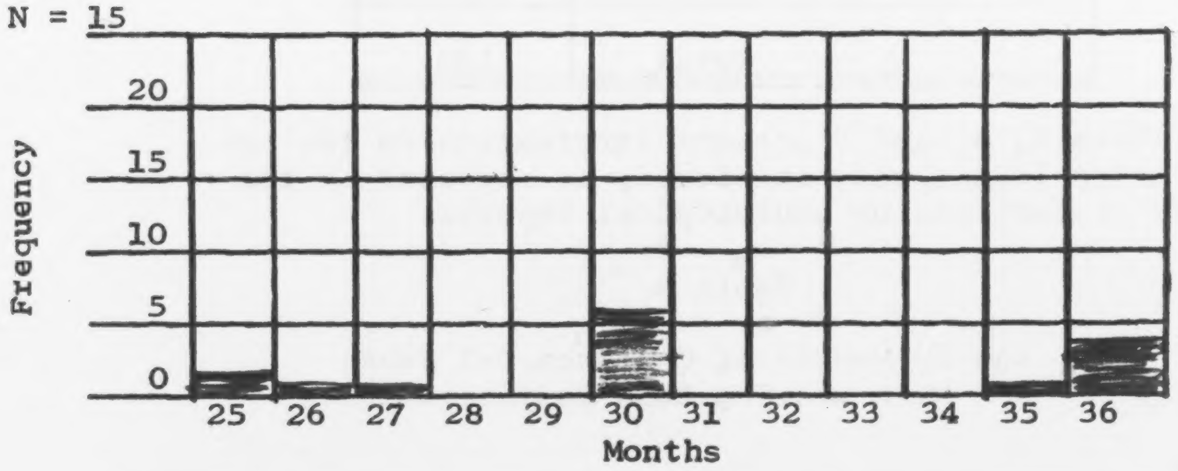


Table 5

Age in Months of Children 2-3 Years
When Hearing Loss Confirmed



Six children were reported identified after the age of three, one was identified at 39 months, two at 44 months, one at 45 months, one at 46 months, and one at 55 months.

Of the 88 cases under three years reported, 44, or half, were discovered during the first year of life. There appears to be two peak periods in the years from one to three, one at 18 months and another at two years. Information was not obtained on seven children during their tenure in the project. Of the four children identified within the first month of life, two mothers had rubella, and one had a deaf sibling. The other child was reported identified at three days; the father was in the Navy. One of these children had a moderate loss, two had profound losses and the degree of loss of the fourth child was undetermined.

The age at which the subjects entered the program is presented in Table 6.

Table 6

Ages Children Entered Program

Ages in Months	No. Cases
0- 6	1
7-12	3
13-18	2
19-24	8
25-30	9
31-36	38
37-42	12
43-48	19
49-54	6
55-60	3
Total	101

Of the 14 entering under the age of two, nine entered after the program had been in operation for 18 months.

Those children born during the high incidence (see Table 1) months from October 1964 through January 1965, reached the age of 31-36 months, by July 1, 1967, when children began entering the project in greater numbers.

Hearing losses are classified according to the pure-tone average of the better ear in Table 7. The information was derived from audiological test reports.

Table 7

Classification of Hearing Losses According to Pure-Tone Average of Better Ear

Decibel Range	Classification	No. Cases
10-20	Normal	0
20-40	Mild	3
40-60	Moderate	13
60-80	Severe	36
80-	Profound	42
	Not available	7
	Total	101

*re: American Standard Association

It was not possible to obtain audiometric scores on those subjects classified as "not available" during their tenure in the project. Included in this group are the children of those parents who attended only a few sessions. No responses were obtained on six of the children classified as profound losses. Regarding rubella, one child is in the mild range, seven in the moderate, six in the severe, and ten in the profound ranges.

Table 8 represents the age of the child in months when wearing of a hearing aid was initially recommended. Some children had hearing aids prior to their entrance into the project.

Aids had not been recommended for 13 children at the time of the grant termination. Nineteen children were still being seen at that time. Aids were not recommended for nine children during their tenure in the project.

In the initial stages of the project, psychological services were not available in the community. Psychological tests were administered by the project psychologist assigned to the psychology department at the University of Kansas Medical Center to 54 children. Twenty-two scored in the average range, 15 were above average and seven below. Of those children with an etiology of rubella, 20 scored in the average range, three were above average and four were below.

Table 8

Age Hearing Aid Initially Recommended

Age in months hearing aid recommended	No. Cases
0- 6	0
6-12	2
13-18	2
19-24	5
25-30	18
31-36	21
37-42	19
43-48	6
49-54	3
55 and over	3
Total	79

Thirteen of the children were identified as multiply handicapped.

The questionnaire developed and given to parents at the time of the initial visit (see Appendix A) included a question asking parents to check factors related to their child's problem. Included were factors relating to the child's behavior, inter-personal relationships, physical development, and the parental role. Responses were obtained from 84 of the parents of children in the project. In the initial phase, 17 parents did not receive questionnaires. Seventy-six percent checked behavior problems, 15 percent feeding problems, 15 percent inter-personal relationships of the child such as lack of playmates and sibling rivalry, 10 percent physical development, and 25 percent, the parents way of handling the child.

In responding to an inquiry on the questionnaire concerning participation in previous programs, 26 indicated attending Parent Institute (see p. 9), ten a regular preschool, one, a day-care center, and 60, no other program.

Wearing a Hearing Aid

In the initial phase of the project various methods were used (with varying results) to attain and maintain consistent wearing of the hearing aid during all waking hours. Following the success of one instructor in setting and achieving the goal of full-time wear within ten days, all staff members followed her example (see "Use of the Hearing Aid", Appendix A) with positive results.

Assessment by Videotape

Of the videotapes filmed for the purpose of assessing progress, 35 tapes of the child and the teacher met the criteria of a) filming at 12-week intervals, and b) following the test format. Slight gains were recorded by impartial viewers on a) response to sound, b) speechreading, and c) speech. The greatest observable gain was the increased rate of the children's observation of the lips of their teachers.

The 13 tapes of the parent and child assessing the number of times the child looks at the parent's mouth showed a mean gain of +18.6. There were no tapes of the parent and child on response to sound that met the criteria.

The greatest gains in the number of times the child looked appear to be made from the first to the twelfth week. This is shown in Table 9 based on six cases on which three tapes were available that met the criteria.

Personnel trained in education of the deaf who viewed the videotapes stated that a) the child appeared to interact more favorably with the parent as opposed to the teacher; b) the parent, when viewed on successive tapes, appeared to be better able to manage the child.

The placement of the children following the Parent-Home Center program is charted in Table 10. Nineteen children remained in the program at the end of the grant period.

The reported ages of 91 of the fathers in the project ranged from 19-50 years with 57 of the total between 25-35 years of age. Thirty-four fathers were active participants in the individual sessions. Of the others, 21 participated occasionally, 25 seldom and 21 never. Completed years of education ranged from 8-20 years with the mode at 12 years. Their occupations covered a wide range.

Table 9

Comparison by Videotape of Child's Rate of Observing the Parent's Mouth for Three Minutes

Case	Week #1	Week #12	Diff. Week 1-12	Week #24	Diff. Week 12-24
#1	66	65	-1	69	+3
#3	32	64	+32	66	+2
#8	70	77	+7	77	0
#11	80	89	+9	88	-1
#14	70	73	+3	88	+5
#83	50	72	+22	69	3
Total			+72		+1

Mean Wk. 1-12 = +9 Mean Wk. 12-24 = +1

Table 10

Program Placement Following Project

Program	No. Cases
PRESCHOOL - Hearing Impaired	52
Regular	2
Crippled Children	4
Dual Program	1
SCHOOL FOR THE DEAF - Public	1
Private	3
PUBLIC SCHOOL - Special Education	1
School for Disturbed Children	1
Tutoring	7
None	6
Unknown	4
Total	82

The recorded ages of 91 of the mothers in the project ranged from 19-21 years with 68 falling between the ages of 20-30 years. The majority had completed 12 years of school with a range from 8-16 years. The mothers of three of the children did not participate in the program; the fathers of these children accompanied them. Sixty-seven mothers listed themselves as housewives.

The number of siblings of each child is shown in Table 11.

Table 11

Number of Siblings

Number of Siblings	Number cases
0	19
1	30
2	24
3	14
4	3
5	2
6	2
7	1
8	1
Not known	5
Total	101

The number of other children in the family relates to the amount of time the parents have available to give individual attention to their hearing impaired child.

The number of sessions attended by each family is presented in Table 12.

Table 12

Number Individual Sessions Attended by Each Family

No. Sessions	No. Cases
1	3
2- 4	6
5- 9	15
10-14	15
15-19	14
20-24	13
25-29	15
30-34	10
35-39	4
40-44	1
45-49	2
50-54	2
55-59	1
Total	101

The following individual and group behaviors appeared to emerge from the small groups of parents and children initiated in February 1970, (see page 15).

a. Individual parents interacted more frequently on a verbal basis.

b. Some parents were observed to form alliances to the exclusion of the third parent. When the group size varied, the expression of these alliances became less overt.

c. The group members were seen to move in the direction of greater independence and self confidence, possibly as a result of the negative and positive aspects of these alliances.

d. Individual parents appeared to develop more confidence in their own rationale and abilities.
e. The groups became more cohesive.

The group learning sessions for parents were evaluated on the basis of a) the parents areas of interest, and b) the effectiveness of the staff planning for these meetings. Following the program at each meeting, parents were asked to write unsigned comments and questions and drop them in a box. The 288 questions and comments obtained in this way are tabulated in Table 13 according to areas of interest and reactions to the meetings.

Table 13

Parent's Areas of Interest and Reactions to Group Learning Sessions in %

Good - Interesting	31
Schools	15
Format of meeting	9
Parent Training	8
Request for additional information	8
Parent's Feelings	6
Child Behavior	5
Hearing Aids	4
Negative	4
Physical (Child)	2
Other Adult learning methods. Helpful Speech Public Relations Hearing Testing Manual Language Parent Behavior Psychological (Child) Staff Teachers Teacher Recruitment	8
Total	100

One-hundred-thirty-three check-outs of material were made from the library assembled for parents during the second year of the program (see Appendix A); 44 of these were in the area of child guidance.

Teachers in the preschool for the deaf at the University of Kansas Medical Center found the parents who had participated in the project more knowledgeable concerning education of the hearing impaired. Therefore, mothers were regularly assigned to work in the classroom on a rotating basis.

It was also noted by the staff that the children were a) consistently observing the lips of the speakers at the time they entered the preschool, b) responding to sounds in the environment, c) exhibiting more cooperative behavior, and d) when compared with children entering preschool at three years of age in previous years exhibited a "readiness" factor for learning not formerly present.

Conclusions and Recommendations

Rubella accounted for nearly half of the cases seen in the project during the three year period. Two-thirds of the rubella cases were born in the period from late 1964 to early 1965, when incidence was considered to have reached epidemic proportions. Wide scale immunization programs currently underway should avoid the cyclical occurrence of this disease.

Of the children under three years of age on whom the age of identification of hearing loss was reported, half were identified in the first year of life. Parents of four children entered the project when the children were one year of age or under, suggesting that there is a lag between identification and the instituting of remediation procedures. Since it is the parent that is receiving instruction, wide availability of services similar to those provided in the project would bring a closer correlation between the time of identification and the beginning of remediation.

Of the parents who reported (84), 75 percent viewed the child's behavior as a problem to them. Viewers of periodic videotapings, observed a marked improvement in the parent's ability to interact favorably with their child and establish patterns of communication. Early establishment of such a relationship is in the best interests of the child as well as his family.

The consistent success of the staff in assisting parents in helping their child become a full-time hearing aid wearer suggests that many parents need guidance, counseling, and periodic reinforcement to assure their positive action. The contact with the professional staff appears to be critical in counteracting negative responses of the child to wearing of the aid. Contacts with other parents whose children wear hearing aids, such as in the group meetings, may be an additional factor in establishing a positive attitude of acceptance.

An attempt by the staff to establish objective measures of progress through periodic videotaping was limited in success. Basic criticism centers around a) techniques of filming, b) reorientation of the staff from teaching to objective testing, c) establishing test measures that measured the child's growth.

Objective viewers noted that it was sometimes difficult to observe whether the child was wearing a hearing aid and whether he was observing the lips of the speaker on the videotape. Careful attention to the setting and lighting is suggested. It was also sometimes impossible for viewers not acquainted with the staff or parents to determine whom they were viewing. Too, in order to make comparisons some items such as speechreading require uniform time sequences for viewers. Therefore, critical items should be determined prior to filming and clearly identified for the viewer verbally or visually on the videotape.

Teachers observed on videotape with the children, in the opinion of the objective viewers, appeared to have difficulty changing their role as teacher to "tester" and continued to use teaching procedures. Pre-training on test procedures for teachers is suggested or the alternative of having the test sequences administered by someone other than the teacher assigned to a parent/child case.

Subjective comments of impartial viewers of the videotapes indicated that a) the children appeared to interact better with the parent than with the teacher, b) the parent appeared better able to manage the child on successive tapes, c) there was observable growth that could not be objectively recorded, d) there was growth in looking and speechreading, but e) little growth in speech, perhaps pointing out the time interval necessary for receptive input before expressive output. This suggests that there was growth that was not measured by the test items used and further attempts to identify critical growth items and ways of testing for these need to be undertaken.

The positive exception to the above criticisms is presented in Table 9 illustrating through the videotape assessment technique that the greatest gains, in the parent's training the child to observe their lips, occur in the first 12 weeks after entrance in the program and that this behavior appears to be maintained into the twenty-fourth week after entrance.

Suggested Procedure for Parent Education

Teachers on the staff experience difficulty in initially teaching parents to integrate the factors of behavior management, speechreading, auditory training, speech and language and relate all of these to the child's current developmental stage. Therefore, each of these areas was correlated by the teacher with the child's developmental stage and initially separately taught to the parent with a final step in instruction being the integration of all five into daily home activities.

A sequence of instruction for parents in each of the five areas was compiled by staff teachers at the time of termination of the project as recommended procedures.

1.1 Behavior

If a hearing impaired child has not learned to behave, the task of teaching him other behaviors related to his hearing loss is adversely affected. His social behavior becomes an important variable of a program when it interferes with the learning process that is to occur. At the Parent-Home Center, it was necessary to focus on a child's social behavior when it made the parents' task of teaching him to understand and use language, either difficult or impossible. Often a child reacted negatively during a session when his parents expected him to interact with them. The child would refuse to cooperate and/or throw a temper tantrum (crying, yelling, et cetera.).

1.11 Parent/child. The following parental behaviors appeared to create or maintain negative behavior(s) in the child and to be most detrimental to the parents effectively handling their child:

a. Indiscriminately punishing the child; i.e., punishing or reprimanding the child for all negative behavior, irrespective of its importance.
b. Using inappropriate discipline for a particular behavior; i.e., using too severe a punishment for a minor infringement or not acknowledging negative behavior used consistently by the child.
c. Using disciplinary measures inconsistently.
d. Failing to develop expectation levels for the child, and therefore, creating situations in which the child is required to interact with his environment.

If the learning process was hampered by the child's negative behavior, the primary objective of the program became one of altering the parent/child relationship. Counseling procedures, behavior modification techniques, or both were the methods used with parents to counteract child behavior problems within a family.

1.12 Counseling. If parents were oblivious to their child's negative behaviors, they were initially counseled by the clinician. The following concepts were usually discussed during the counseling process:

a. Making parents aware of their child's negative behaviors and the effect on the child's optimal ability to learn.

b. Describing methods for handling negative behavior(s) including choice, consistent and appropriate use of punishment, ie., punishment appropriate for the severity of the negative behavior.

c. Helping parents perceive and then analyze their own behavior and its effects on their child.

d. Describing behavioral changes which are typical during the stages of child growth and development and how to cope with them.

Counseling made parents more aware of their child's behavior, as well as their own, how they related to and interacted with their child, and how they could better carry out disciplinary measures so as to positively affect their child. Counseling, therefore, improved the parent/child relationship, often changed parental behavior, and as a result, reduced or eliminated that behavior which interferred with the child's learning. If the child's behavior improved, the learning process proceeded with relatively little unnecessary interference. If, however, the insight gained through counseling and the subsequent improvement of handling of the child was not sufficient in changing the child's behavior, it became expedient to introduce the parents to the use of behavior modification techniques.

1.13 Behavior Modification. For the purposes of this project, behavior modification was defined as a method of changing a child's behavior utilizing an objective technique. Pre-modification and modification data was collected and recorded by the parent and then graphed by the clinician on six-cycle log paper so as to reveal the frequency of occurrence of the specific child behavior. When the parent had collected at least ten days of pre-modification data, he chose a consequence which was to have a decelerating affect on the negative behavior. The parent then continued to collect pertinent data; i.e., the time during which the data was collected and the number of times the child exhibited the behavior during that time produced a measure of the frequency of the behavior. The graphing of rates (F/T=R) on the log paper objectively illustrated the deceleration, acceleration, or unchanging maintenance of the frequency of the behavior. If the behavior was not markedly decelerated by the consequence, a new consequence was chosen. The parent continued to record rates to determine the effect of one or more subsequent consequences. If the behavior was decelerated, the consequence, which proved to be most effective, was utilized until the behavior was extinguished.

The value of such a procedure lies in the fact that parents learn the following:

a. That they need not be resolved to passively accepting any of their child's negative behavior.
b. That they can change their child's behavior.
c. That they can learn how to discipline their child.
d. That they can become more alert to those consequences which will or will not have any affect on the child.
e. That they can learn to apply a consequence with consistency and immediacy.
f. That changing the child's behavior is essential if learning is to take place with as little difficulty as possible.

At the Parent-Home Center, behavior modification projects were completed with children as young as one year of age. Some of the negative behaviors that were successfully decelerated included the following:

a. Removing the earmold of the hearing aid.
b. Getting out of bed at night.
c. Throwing objects.
d. Hitting and kicking.

Behavior modification techniques were also used with parents who were aware of their child's negative behavior, but who had been unable to effectively cope with it and wanted some specific guidance in dealing more skillfully with the behavior. In such cases it sufficed to teach the parents how to use behavior modification techniques. They usually could pinpoint the negative behavior and were then able to record the data. Often the parent's intuitiveness and familiarity with their child eliminated the problem accompanying the choice of an appropriate consequence which would decelerate his behavior. The functionality of the consequence was not objectively determined, however, until the data had been graphed.

In addition to teaching the parents behavior modification techniques for decelerating negative behavior, concepts or techniques were taught for accelerating positive behavior by:

a. Teaching parents to pinpoint positive behavior and praise the child. Praising a hearing impaired child includes visual and physical aspects (i.e., a physical pat).
b. Respecting the child's wishes, demands, or desires when appropriate.
c. Responding to the child so that he does not have to revert to the use of negative behaviors to get attention.

1.14 Discipline. It was suggested to parents that they

a. Reserve the most severe consequence as punishment for behaviors related to health, safety, and the rights of others.
   Example: Child running into the street without looking.
b. Reserve the use of the word "no" for specific types of behaviors and remain near the child to see that he has accepted the consequence.
c. Prevent the child from emitting a negative behavior by offering him an alternate behavior.
d. Expect the child to carry out a task if he has been asked. If he refuses, he is required to perform one more action. The parent praises the child immediately then removes him from the situation. The child is not to be asked to carry out a task unless time is allotted to utilize disciplinary means if necessary.

1.2 Language

Language development is ongoing for every child from birth. Many variables such as the child's chronological age, social age, mental age, listening age, and linguistic age, affect the rate, extent and complexity of language development the individual child attains. With the exception of the chronological age, hearing impairment at some point in time retards the growth of all of these ages. The goal for the language program was to determine the linguistic age of the child and to increase the rate, extent, and complexity of his language development receptively and expressively, through the parents.

Language, for the purposes of the project, was defined as a symbolic means of communication. Aspects of receptive language include decoding, understanding, speechreading, reading, and speaker input. Expressive language includes encoding, vocalizing, babbling, speaking, writing, and child output.

1.21 Receptive language. Based on the premise that input precedes and precipitates output, the parents were instructed to talk to their child using:

a. Speech pertaining to the current action occurring.
b. Speech pertaining to the object being seen.
c. Speech appropriate to the child's linguistic level.
d. Consistency
e. Repetition.

Parents were instructed to use the visual-tactile-auditory sensory modalities. Here, because of the overlap, see the section on speechreading (p. 44).

The parents help the child link words and sounds with meaningful experiences. The parental input moves through stages adapting to the child's linguistic level. Intonation, inflection, rate, and intensity play a major role in delivering meaning. Examples are as follows:

Language order phonemes--

oh - happiness
oh - disappointment
oh - anger
oh - pleasure
m - pleasure
m - food
ou - pain
rrr - car

Single words--

up
down
push
pull
love
get up
look
hello, hi
bye-bye
sit down
hurry
no
yes
listen

Naming stage--

That's a boy.
That's a dog.

Descriptive stage--

The dog's sleeping.

1.22 Expressive language. Based on the premise that output is a direct result of the input, the parents are instructed to begin to encourage, modify, and expand the child's output. Examples are given below:

a. Use the microphone of the auditory training unit. Demonstrate speaking through the microphone. Instruct the parent to do so. Then place the microphone close to the child's mouth and encourage him to use his voice.
b. Demonstrate for the parents the concept of imitation by encouraging the child to imitate the teacher's model of sound produced.
c. Instruct the parent to reinforce positively the child's use of his voice and attempts at speech.
d. Instruct parents in giving a model of the sound of /m/ visually, tactilely, and auditorily, while the child has his hands on the parent's face. Then have the child put his hands on his own face and encourage him to follow and imitate the parents model.
e. Instruct the parents to lengthen their verbal input in order to eventually expand the child's output.
f. Follow normal infant speech and language development.

1.3 Speechreading

1.31 Observing the speaker's mouth. The habit of looking at the speaker's mouth is taught to the child, so that he can make use of the visual clues of speech. Four* techniques presented to the parents for habituating the child's looking at the speakers mouth were:

a. The speaker holds the object being discussed near the mouth so that the child can simultaneously see the lip movements and the object.
b. The speaker positions himself at the child's level and faces him so that he sees mouth movements.
c. The speaker when performing an action, begins the action, stops momentarily prior to completion, waits until the child looks, speaks and completes the action either simultaneously or in close sequence.
d. The speaker gives the child a visual track to follow by first determining that the child is observing his (the speaker's) finger and then points to his mouth.

1.32 Talking to the Child. The parents and/or other speakers were instructed to talk whenever the child observed their mouth. Three aspects of correct language-building verbal input were taught.

a. The speaker talk immediately.
b. He speaks about the object or action being observed by the child.
c. He selects words that are at an appropriate** linguistic level according to the child's current language developmental stage.

1.4 Auditory Training

Early use of residual hearing is felt to be a factor in overcoming sensory deprivation. While it is not known how capable the very young child is of focusing on and recognizing lip movements, it appears that the very young child is capable of having his attention aroused by sound that is loud enough. If sounds can be made deliberately meaningful to him at a very young age, he will continue to respond to them. It is also possible that the child may achieve more

*An additional procedure was used by some teachers. The speaker holds an object the child desires along with the child, until he observes the mouth and then releases it to the child. The speaker does not allow the child to complete an action until he has observed the mouth.

**The level of verbal input is more advanced than the child's current level of verbal output.

natural voice characteristics through early imitation of what he hears. The parent learns to move from pointing out sound to letting the child find the sound. The child moves from babbling stage to imitating stage through auditory stimulation with a goal of spoken language.

1.41 Response to sound. Of initial interest is the presence or absence of residual hearing that can, perhaps, be amplified with a hearing aid. Therefore, attention is directed to teaching the child to respond to sound when he hears it. Procedures for conditioning the child to respond to sound were demonstrated for parents in order to

a. Teach the child to focus on an auditory stimulus and respond to it;
b. Prepare him for audiological testing;
c. Confirm for the parent the young child's ability to respond to an auditory stimulus.

This reinforced for the parent their role in the training process. Procedures were as follows:

a. Starting with a noisemaker, such as a cricket (a metal toy producing a loud click) have the child put blocks into a container. Use visual and auditory stimuli first, letting the child see the cricket being used, as well as having the parent put a block into the container and guiding the child's hand to do the same.
b. As the child comprehends the task, the visual clue is removed. The child is reinforced with approval for each appropriate response.
c. The parent takes a cricket home on the first or an early visit at the Parent-Home Center, and is instructed to use it, as demonstrated, for short periods several times each day until the child masters a response pattern.
d. Other types of noisemakers should be introduced and may be presented at greater and greater distances.

1.42 Sounds in the environment. A second aspect of auditory training is attending to sounds in the environment and identifying their sources in order for sound to become meaningful. Procedures for developing the child's attendance to sound were taught the parents as listed below:

a. Parents were instructed to point to their own ear immediately upon hearing a sound the child possibly hears (such as a door slamming or a lid dropped on a pot, which may occur naturally or which the parent may initiate), and say, "I hear". A happy look on the parent's face further enhances the desirability of hearing that sound.

b. As the child begins to respond by pointing to his own ear upon hearing environmental sound, parents choose a sound for the week, using repeated opportunities to point out that sound (such as a washer, garage door, or whistling kettle). The parent prepares the child to listen for it by calling attention to the object making the sound, then points to his own ear saying, "I hear." If the sound emanates from outside and cannot be seen, the parent should have a picture or a small object to show the child (such as an airplane or truck). When a sound occurs naturally, but the parent can repeat it, it should be done.

c. When the child has developed awareness and auditory identification of common household sounds, parents can produce the sound without a visual clue and have the child find it.

1.43 Talking to the child. Parents were given instructions on providing input to the child's auditory mechanism of sounds associated with speech. The very young child is being physically handled countless times a day by the parent as he is lifted from the crib, diapered, dressed, put into the high chair, soothed, cuddled, removed from danger, et cetera. The parent is instructed to coo in the child's ear, which is in a position close to the parent's mouth. The child learns to associate the parent's physical proximity with auditory stimulation which he also feels since he is held to the parent's chest. This is added reinforcement. Parents were instructed

a. To choose a specific vowel for a two-week period, producing it in a gliding, inflectional pattern (awawawawawaw).

b. To produce the sound in a broken pattern (aw-aw-aw-aw).

1.44 Child's vocal output. The child frequently imitates the parent, turning his mouth to the parent's ear and repeating the sound, or perhaps only the inflectional pattern, or only the action. At this point the parent is instructed to

a. Place the child's hand on the parent's face while producing sound.

b. Put the child's hand on the child's face to encourage imitation by indicating tactilely that the child is expected to imitate.

c. The parent also points to his/her own ear and says "I hear" when the child vocalizes.

For the profoundly deaf, the kinesthetic modality may be introduced here. The child learns to discriminate between the parent's differing patterns, and eventually repeats patterns as heard from greater distances and through his hearing aid.

1.45 Other procedures. For an older child who is not as physically handled by the parents, lap games may be devised to present these auditory stimuli. Lap games that can be played with the very young, as well as older children are:

a. Pattycake, or other nursery rhymes, involving the child in accompanying actions--inflectional patterns are the important feature here.
b. Feature identification, the vowel of eye, nose, mouth, chin being the dominant pattern, ending with a tickle under the chin accompanied with a gleeful sound. This activity may also serve as a speech and language activity, as well as looking and listening. If the visual stimulus is withdrawn it becomes a listening discrimination task.

Parents are reminded that these are normally playful activities with the small child and should be fun times, both for the parent and child. They are moments of relaxation and approval, and the child's auditory and verbal responses are bonuses arising from the slight alteration they make in their stimulus pattern.

a. Parents are encouraged to use the child's name to secure his attention consistently and frequently without gestural clues. Used as an attention getting device, the name precedes the phrase or sentence rather than appends it.
b. The approval phrase the parent chooses to use (such as "good boy") should be spoken with the same inflectional pattern each time as the child may only recognize the pattern.
c. Parents may help the child learn to localize by calling his name from different parts of the room, or to discriminate between the voices of either parent.
d. Actions to correlate the sounds while playing may be stimulated by the parent such as "urrr" while pushing a car on the floor; or calling attention to the sound of the toy itself.
e. Phonemes to convey meaning such as "mmmm" for food tastes good, "ou" for pain, "oo" for dirty, "whee" while flapping a sheet across the bed, are suggestions for use to parents.
f. The name of a sound, such as boom, pop, bang, may be used when appropriate.
g. Gestures may accompany speech, such as waving while saying "bye-bye". These gestures are phased out as

soon as the child comprehends speech.

h. The parent is early instructed to use verbs to describe common actions, such as "pull" in opening the door, "turn" in opening a jar. This may be accompanied or followed by naming objects being used progressing to phrases and sentences.

i. In an older child, or one with more hearing, discrimination may progress to sentences of similar structure, such as "Bring me daddy's shoe", versus "Bring me babies' shoe".

1.46 Amplification. Simultaneously with the home program, the teacher, during the hour session, may introduce additional practices.

a. Following conditioning to a cricket at home, a portable audiometer can be used to elicit responses from the child to varying degrees of pitch and loudness.

b. This may progress to more complex speech sounds by using a microphone attached to the audiometer.

c. Rate may be introduced by having the child clap or sway to the music appropriately.

d. Recordings may be used such as - Learning to Listen (John Tracy Clinic, Los Angeles), What's It's Name (University of Illinois Press, 1950), Sights and Sounds (Captioned Films for the Deaf, Washington, D. C.).

e. Occasionally an individual body-borne radio frequency type amplifier may be used.

Teachers may interpret the child's audiogram to the parents and aspects of how his child may hear speech.

1.47 Individual hearing aid. If the child does not have a hearing aid upon entering the program, as soon as an aid is recommended by the audiologist, the child is introduced to the aid in a systematic program. Three sets of mimeographed instructions are discussed in detail and then given to parents (See Appendix A).

a. Instructions in the use and care of the hearing aid.

b. Instructions for getting the child to wear the aid.

c. Instructions for determining the source of minor malfunctions of the aid.

Program Sequence

The following recommendations are made with reference to the sequence of instruction offered to parents. Parents can first be exposed to individualized instruction, until they achieve some degree of competency in the use of the techniques and in the handling of their child. At that point they are grouped with several other parents for group participation while being retained for periodic individualized instruction. When the children are three years of age, the orientation for them and their parents is shifted. Instead of merely observing other parents working with their children in a parent group setting, they have an opportunity to teach a small number of children in a group, as has been described earlier (see p. 15). It is anticipated that this group would satisfy parental, as well as child needs prior to the time the child enters a structured preschool program on a full-time basis. At the time of entry into a school program, the child needs social skills, attention behavior, et cetera, gained in this group. Once the child is in preschool, the parents continue to be used effectively, both in and outside of the classroom situation because of their understanding of techniques and how to use them with hearing impaired children.

Content

In the initial two years of the project, meetings held in the late afternoon for parents appeared to meet with enthusiastic response. At the group meetings parents seen for individual appointments had their initial opportunity to meet and gain the supportive help of a group with similar problems. The nine percent response of comments on the plan of the meetings reflects the written appreciation of the careful staff planning for education in an enjoyable way.

Tabulation of the parent's questions and comments indicate great interest in schooling, perhaps demonstrating the long-range concern and planning for the child so often verbalized by them. Parents suddenly ejected into a new field of interest following the identification of hearing impairment in their child need ready access to information on special schooling to help alleviate their concern and assist them in planning. Wide dissemination of information concerning the newly assembled data bank of the Special Education Information Center (SEIC) of the Bureau of Education for the

Handicapped may fill this unmet need for parents not in organized programs.

Perusal of Table 13 indicates a variance of parent interests from the topics which draw the attention of professional personnel in the field of education of the hearing impaired. Joint planning by parent and professional is indicated.

In the final year of the project, group learning sessions for parents in the project were combined with the monthly evening meetings of parents in the preschool at the University of Kansas Medical Center to improve the total integration of the program. The four percent negative responses to the meetings tabulated were all received in that final year, although an attempt was made by the staff to present four levels of instruction. Negative comments centered around a) rejection of the role of home-teacher by the parent, and b) rejection of the content as not meeting the parent's current interest in regard to the child. Some parents in the preschool group had never previously participated in a parent instruction program. Some who had, now indicated their current concern was with future schooling for their child. Parents outside of the Greater Kansas City area preferred daytime meetings. Future group program implementation should be planned to determine a) whether there is a critical time in the child's life when parents can be involved in a parent-teaching program, b) whether initial assumption of the teaching role by professionals obviates the parent's assumption of his correlate role during non-school time, and c) joint identification by parents and professionals of a sequence of parent instruction that meets the parent's and the child's needs.

Parent written comments following the conclusion of the workshop on the role of parenthood itself indicated positive response to the parent-led workshop format. At the same time uniform disappointment was expressed at having the material furnished to the group centered around so-called normal growth and development with no attention focused on hearing loss. Joint planning between parent and professional is again indicated since the staff viewed the information contained in the provided material as essential to the child's progress.

The library assembled for parents appeared to meet the

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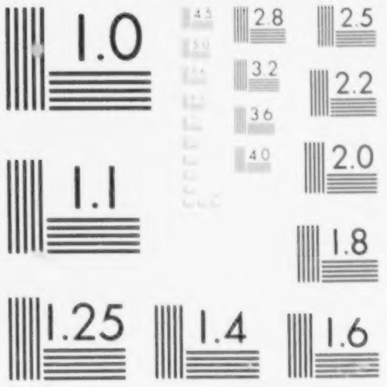
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MICROCOPY RESOLUTION TEST CHART
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individual needs of the relatively small segment of the parents who sought additional knowledge through reading.

This approach to early training of the hearing impaired child is a logical outgrowth of the known information in the various fields of knowledge integrated in the concept of early education through parent education. Many parents can and will accept the role of educator. It suggests that assessment of progress is most easily determined by visible signs but that pinpointing and describing these visual clues presents a further task for research. An additional area of research lies in determining the potential of these early years of education and relating possible progress to actual progress.

In summary, a) parents were instructed on methods of stimulating their children to utilize their residual hearing and their vision. They were also instructed on correlating language development techniques with activities in their own home; b) In group learning sessions parents learned about the educational implications of hearing loss and procedures for alleviating the resulting learning disability; c) Parents and their children were videotaped and the videotapes used as self-teaching devices for parents as well as a method for attempting to assess progress, and d) cooperation was maintained with other centers through participation in the conference on "Current Practices in the Management of Deaf Infants (0-3 years)", Nashville, and thru staff visits to other centers as well as consultants who visited this project.

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Appendix A

PARENT-HOME CENTER
QUESTIONNAIRE

Please complete this form and return to:

Department of Hearing and Speech
University of Kansas Medical Center
Rainbow Boulevard at 39th Street
Kansas City, Kansas 66103

Fill out as much of the information as you can. This information will be kept strictly confidential. If there are any questions regarding how to reply to the requests made on this form, leave the part in question blank. Please answer each questions with a "yes" or "no" when indicated.

IDENTIFYING INFORMATION

Name ______________________ Date ______________________

Address ______________________ Telephone ______________________

______________________ Referred by ______________________

Date of birth ______________________ Address ______________________

Father's name ______________________ Age ______________________

Occupation ______________________ No. of school years completed ________

Mother's name ______________________ Age ___ School years completed ________

Occupation ______________________ Mother's father's occupation ________

Other children in the family: Males_, _, _, _, _, _ Females_, _, _, _, _, _

Other persons in the home ______________________

Doctor ______________________ Address ______________________

DESCRIBE YOUR CHILD'S LANGUAGE PROBLEM: ______________________

____

Check the following items which describe your child. Fill in information where requested. Encircle questions that you do not understand or need help with:

I. PREGNANCY

1. Mother had miscarriage previous to this child's birth ______ How many and describe believed cause ______________________
2. Mother had miscarriage since this child's birth ______ Describe believed cause and how many ______________________
3. Mother had measles during pregnancy ______________________
4. Mother hemorrhaged ______________________

5. Pregnancy generally unpleasant ______________________________

6. Pregnancy generally pleasant ______________________________

7. Pregnancy - no feelings one way or another _____ Describe : __________

____

8. Mother had illnesses or accidents during pregnancy ______ Describe: ____

____

9. Blood incompatability (RH factor) ______________________________

II. BIRTH

1. Normal _______________ Breech ____________ Caesarean ____________

2. Birth weight _______________

3. Complete labor (Estimate time from onset of five minute contractions)

____

4. Anesthesia used __________________ Describe type _______________

III. NEWBORN

1. Baby blue at birth ____________ 2. Baby yellow at birth ______________

3. Scars or deformity at birth _____ Describe ______________________

4. Instruments used at birth ______ Describe ______________________

5. Birth weight regained normally ______ If not, describe ______________

____

6. Baby damaged at birth _______ If so, describe ______________________

7. Baby had difficulty beginning to breathe ____ How long before normal breathing was restored and by what means ______________________

8. Baby had seizures __________ What medication was used ______________

____

9. Baby had feeding difficulties ______ Describe ______________________

____

10. Baby had swallowing and sucking difficulty _____ Describe ____________

____

IV. ILLNESS

1. Measles ______________ Age ______________
2. Whooping cough ______________ Age ______________
3. Scarlet fever ______________ Age ______________
4. Influenza ______________ Age ______________
5. Diphtheria ______________ Age ______________
6. Chicken pox ______________ Age ______________
7. Mumps ______________ Age ______________
8. Other ________ Describe and give age ______________
9. Meningitis ______________ Age ______________
10. Poliomyelitis ______________ Age ______________

1. Encephalitis ______________ Age ______________
2. Epilepsy ______________ Age ______________
3. Tonsillitis ______________ Age ______________
4. Bloody discharge from ears ________ Age ______________
5. Chronic colds ______________ Age ______________
6. Sinusitis ______________ Age ______________
7. Allergy ______________ Age ______________
8. Strep throat ______________ Age ______________
9. Unusually high temperature ________ Age ______________
10. Coma ______________ Age ______________

1. Rigidity ______________ Age ______________
2. Convulsions ______________ Age ______________
3. Is child receiving any medication ______ Describe ______________
4. Tonsillectomy ______________ Age ______________
5. Adenoidectomy ______________ Age ______________
6. Other surgery ________ Age ______ Describe ______________

7. Accidents ____________ Age ______ Describe ____________

____

8. Visual problems ____________ Age ______ Describe ____________

9. Hearing problems ____________ Age ______ Describe ____________

V. HEARING PROBLEMS

1. Deafness in relatives ________ Exact relationship ____________

Cause ____

____

2. Alcoholism ____________ What person or persons in family ____________

____

____

3. Epilepsy ____________ What person or persons in family ____________

____

____

4. Mental illness ____________ What person or persons in family ____________

____

____

5. Speech problems ____________ What person or persons in family ____________

____

Describe the type of problem ________________________________

____

6. Left-handedness ____________ What person or persons in family____________

____

7. Reading difficulties ________________________________

____

____

____

VI. DEVELOPMENT

1. Shows response to mother at age of . . ________________ months
2. Sits alone . . . . ________________ months
3. Walks alone . . . . ________________ months
4. Eats with spoon . . . . ________________ months
5. Takes off coat . . . . ________________ months
6. Puts on coat . . . . ________________ months
7. Buttons coat . . . . ________________ months
8. Zips . . . . ________________ months
9. Snaps . . . . ________________ months
10. Ties own shoes . . . . ________________ months
11. Toilet training completed . . . . . Yes _____ No ______
    (a) Bowel: daytime at _____ months night at _____ months
    (b) Bladder: daytime at ____ months night at ______ months
12. Does child use left hand ______ right hand _____ both _______
13. Does he ever have nightmares? ____________________________
14. Does he wet the bed _____ Bite nails ______ Suck thumb _______
15. Is he afraid of anything such as animals or the dark _____________
16. Does he do the following:
    Eat well _______ Cry often _________ Sleep well ________
    Go to bed easily ______ Have temper tantrums ______ Describe ___
    ____
    Do regular tasks or chores at home ______ List _______________
    ____
17. Which of the following statements is most typical of your child's hearing and speech development:

    Gives little or no attention to speech __________
    Shows no evidence of comprehending speech __________
    Responds to simple commands __________
    Uses voice other than crying __________
    Says no words __________

17. Cont'd.
    Speech is limited to single words ____________
    Speech contains simple phrases ____________
    Talks in short sentences ____________
    Responds auditorily
        to voice ____________
        to doorbell, telephone, etc. ____________
        to airplanes, trains, trucks, etc. ____________

18. Age of first word- __________ months   List the first words:

(a) ____________________ (b) ____________________

(c) ____________________ (d) ____________________

19. What is the average number of words in the sentences that he uses ______

VII. HOME DEVELOPMENT

1. Who first became concerned about the child's hearing? ____________
____

2. When was the hearing difficulty first noticed? (Age of child) __________
____

3. In what way did the child's attention to sound first differ from that of other children of his age? ____________________

4. Who referred you to seek advice at the Medical Center ____________
____

5. Whom did you first see at the Medical Center ____________________

How many repeated visits have you made to the Medical Center __________

When was the first visit ____________________

6. Have you consulted any other person or agency (psychologist, physician, etc.) about your child's problem? ____________________

If so, give names and addresses and what you were told about your child.

____

____

7. Does your child have a hearing aid? _______ Who recommended it? _______
____________ What kind of aid is it? ____________ Where was the aid purchased? ____________ When was it purchased? ____________

8. If aid worn by child? __________ How many hours a day? __________

If not, for what reasons? __________

9. How does your child make his wants known __________

10. How do you respond to your child's gestures? __________

11. On what occasions do you insist that the child be silent? __________

12. In what ways have you provided the child with the names of objects and actions?

13. What things have you done to reward the child's attention to you when you talk to him __________

14. What things have been done to help your child give attention to you when you talk to him __________

15. Number of persons with whom the child shares a bedroom __________

16. Language other than English spoken in the home __________

17. Does the child play with other children? __________ Children in the neighborhood? __________ Brothers and sisters? __________

18. Do you allow your child to go outside the yard to play? __________

Does your child go on a slide? __________ Swings? __________ bike? __________

others? __________

VIII. EDUCATIONAL HISTORY

1. Has your child attended any preschool? __________ If so, which ones, for how long, when? __________

2. Has your child been taught previously by anyone? ____________________

If so, by whom, for how long, and when? ____________________

____

____

IX. PERSONAL DATA

1. Describe the child's personality (outgoing, withdrawn, cooperative, etc.)

____

2. What games or activities does your child enjoy most? ____________________

____

3. Describe any behavior problems you have with your child ____________________

____

4. Describe methods of discipline you use with your child ____________________

____

Are these effective? ____________________

5. What is your child's attitude toward(s):

(a) self ____________________

(b) others ____________________

(c) situations ____________________

6. What annoys you most about your child? ____________________

____

7. Does your child look at books and pictures? ____________________

(a) On own initiative? ____________(b) with parents ____________

8. Do you read to your child? ____________ How often ____________

9. Other talents ____________________

____

10. Other deficiencies ____________________

____

11. If you were to evaluate what factors may be related to your child's problem what would you include? Encircle as many factors as you think are present.

Hearing problem

Emotional problem

Cerebral palsy

Epilepsy

Visual disturbance

Brain injury

Siblings rivalry

Feeding problems

Stubbornness

Lack of playmates

Too much protection by father

Too much protection by mother

Neglect by mother

Neglect by father

Overprotection

Behavior problem

Mental retardation

Developmental retardation

Environmental problems

Inconsistency of parental handling

12. Are there any factors that you would like to discuss in more detail? ________

____

____

____

13. John Tracy Correspondence Course.
Have you enrolled for the Course? ____________________

Are you using the Course? ____________________

Have you completed the Course? ____________________

14. Have you been to Parent Institute? ____________________

15. What do you expect from the Parent-Home Center? ____________________

____

____

____

____

____

____

____

I hereby give my consent to have copies of reports, video tapes, tests and any other materials obtained for the Parent-Home Center concerning my child's development sent to the person who referred me to the Hearing and Speech Department and to other professional persons or agencies concerned.

I will be present for any requested desmonstrations.

I authorize the University of Kansas Medical Center to obtain necessary information from other agencies and/or professional persons concerning my child.

I understand that both parents are expected to attend group meetings and that no more than two absences are permitted from either individual appointments or group learning sessions without forfeiting the opportunity of further participation in the Project.

Father's signature ______________________

Mother's signature ______________________

Date ______________________________

Person completing this form (if other than parent) ____________________
State Relationship ____

October, 1967

USE OF THE HEARING AID

I. Good Practices

  A. Listen to the new aid with new batteries as a measure of perfect performance. This knowledge will help you determine when the aid is not operating at peak performance.

    1. Test the aid each night, not in the morning when the battery has had a chance to recharge.

    2. Take the earmold off the receiver and hold the receiver next to your ear.

    3. Turn on the aid to a comfortable gain setting for you (Probably #2).

    4. Put on a talking record or one with lyrics to a specific volume setting. (A record is standardized whereas your voice is not. If a record is not available, however, use your voice and try to speak at the same volume each night.)

    5. Attempt to develop an auditory memory for the clarity and loudness of the aid. If the aid does not sound as clear or as loud as it always has, one of the following problems may be present:

      a. The aid may have gotten dirt in it.

      b. The cord, receiver, batteries, or aid itself may not be working properly. Until your child learns to recognize these problems, you are the best judge of a properly functioning aid.

  B. Also listen to the aid each time before putting it on the child. This routine is necessary in order to prevent having your child wear an aid that is not working properly.

    1. Set the aid at your gain setting.

    2. Talk into the aid.

  C. Always put the hearing aid halter on your child in the morning when dressing him.

    1. Outside clothing

      a. Since clothing worn over the hearing aid muffles the sound, your child should wear his aid outside his clothes whenever possible.

      b. If your child is eating, a bib or protective covering for the aid is desirable.

    2. Inside clothing

      a. Hearing aids are delicate instruments and can easily collect dirt as well as sound.

b. If your child is going outside to play (in a sandbox, etc.), the aid should be put under his clothes.

D. Remember: the aid is a microphone which will pick up sound much better if you are close to it when you talk.

II. Beginning Use of the Aid with Your Child

A. Steps to be followed

1. Listen to the aid to make sure it is working properly.
2. Have the room quiet.
3. Seat the child in a chair with a favorite toy. (This toy will hopefully divert your child's attention when you put in the earmold.)
4. Also get a noisemaker (horn, pie pan and spoon, etc.), and let the child listen to it before you put on his aid.
5. Show the child the aid so that he knows it is going to be used.
6. Make sure that the hearing aid is turned off and its volume control is turned down.
7. Place the transmitter in the pocket of the halter.
8. Put the earmold in the child's ear. (It may take you awhile to get used to doing this.)
9. Turn on the aid from O (Off) to M (Microphone).
10. The following are two ways in which you may determine the proper gain setting of the hearing aid for your child if the audiologist has not already told you at what volume to place the gain control:

    a. One possible procedure

        (1) Determine the gain setting in a quiet place.

        (2) As you turn up the volume, continue to talk normally in the aid (do not shout or talk loudly).

        (3) When you get a response (eye blink, eyes open wide or etc.) from your child that he has heard your voice, continue to turn up the volume until the child is responding consistently.*

    b. Second possible procedure

        (1) Do conditioning with the child by having him put a block into a container when he hears your voice ("lahlah").

*Note this gain setting, for it will be the setting for your child at this stage.

(2) Keep turning down the aid until the child no longer responds (by putting in a block).

(3) The setting just before the child stopped responding will be the appropriate one for him in *quiet*. It will, however, probably be too loud for him in a noisy area and will, therefore, need to be turned down until he returns to a quiet place.

11. Now let the child hear the noisemaker again with his aid on at the proper gain setting.

a. Hopefully he will learn to understand that he can hear the sound from the noisemaker (or hear it louder) with his aid on.

b. If the sound is loud, hold it away from the aid and slowly bring it closer to the aid, so the child is not frightened by the loudness of the noise.

c. You should always have the child listen to some specific sound when he has on his aid. *Deliberate* auditory stimulation is *very* important.**

B. A Time Schedule

1. The following guide should be of help to you in getting your child to wear his aid all waking hours within two weeks:

First day	4 five minute periods
Second day	4 ten minute periods
Third day	4 fifteen minute periods
Fourth day	4 twenty minute periods
Fifth day	4 thirty minute periods
Sixth day	4 forty-five minute periods
Seventh day	4 sixty minute periods
Eighth day	4 one-and-one-half-hour periods
Ninth day	4 two hour periods
Tenth day	4 two-and-one-half-hour periods or all waking hours

2. The *first* day

a. You should have your child wear his aid for only five minutes (or less) at a time, but he should wear it at least *four* times during the day.

b. Your child may want to wear his aid all the time on the first day. It is preferable, however, to follow the schedule so that his ear can become accustomed to the mold. (No eye doctor lets a patient wear new contact lenses full time at first.)

** See the chart *Initial Use of the Hearing Aid*. It should be used to help remind you to call your child's attention to sounds whenever he has on his aid.

   c. If your child crys on the first day because he wants the aid left on, let him wear it for another five or ten minutes during each of the 4 periods. Then you take off the aid, while keeping on the halter.

   d. If you notice your child attempting to take out the earmold, tell him to leave it in for a minute. Then after several seconds, you take out the mold and praise the child for wearing the aid.

C. Points to Remember

1. A child should never wear an aid unless it is turned on, working properly, and set at the proper gain setting.

2. Call your child's attention to sounds all the time, so that he begins to realize there is a reason to wear his aid.

3. Until your child can be depended upon to leave on his hearing aid, you, not he, must always be the one to take out the mold. If the child takes out his mold during the time period allotted for him to wear the aid, then you must do the following:

   a. Turn down the volume.

   b. Turn off the aid.

   c. Put the mold back in his ear.

   d. Repeat Steps #9 through #11.

4. Once your child is wearing his aid for more than ten minutes at a time, you will have difficulty keeping him seated. It is fine for him to move around, but you must be sure he keeps in his earmold and does not play with the volume control.

5. Once your child is wearing his aid for more than fifteen or twenty minutes, you will not, of course, be able to maintain a quiet environment. Hopefully, however, he will have become accustomed to listening to louder sounds, noise, etc., because of the auditory training you are doing with him.

6. Once your child is wearing his aid all waking hours, he may want to wear it at nap time too; and you may let him.

7. Your child may want to wear his aid to sleep at night, but he should not be allowed to do so.

8. Eventually your child will grow accustomed to the sounds in his environment, and then he may want the volume control set higher so as to get more amplification.

III. Initial Use of the Hearing Aid with a Problem Child - For one reason or another some children do not want the earmold put in their ear. You are advised to follow these steps when you are unable to proceed as outlined in #II:

A. Your child may need to see other children wearing aids.

B. If your child does not want to let you put in the earmold, you should do the following:

1. Follow Steps #7 to #11.
2. Hold him in your arms and rock him. The reason he does not want to wear the aid may be due to unwarranted fear.
3. As long as your child continues to be frightened, do not keep the aid on him for more than one or two minutes each time period you put it on him.
4. Continue to put the mold back in the child's ear if he pulls it out. You must be the one who takes out the mold.
5. Do not turn on the aid if the child is crying.
6. Incrase the length of time the child wears the aid - taking into consideration his willingness.

IV. For the Older Child

As soon as possible, your child should learn to adjust the volume control himself. There is no one setting on the volume control which is satisfactory for all of the different acoustic environments in which the child will find himself. That is, in quiet places, the volume should be turned up to take maximum advantage of the aid's amplification, and in noisy places the volume should be turned relatively lower to avoid discomfort. Because you cannot always make these adjustments of your child's aid, he must learn to keep the volume control set, not at a level where surrounding sounds are barely audiable, but at a level for best listening.

V. Important Considerations

A. Your child needs his aid; you know this fact, but he does not. For this reason, you must put the aid on the child, eventhough the child does not want to wear it. He will soon want to wear his aid knowing the following:

1. It does not hurt.
2. You want him to wear it.
3. It is tuning him into his environment.

B. The longer it takes you to get your child to wear his aid full time, the longer it will take him to realize that his aid is not supposed to come off every few minutes or hours.

C. The younger the child, the more often he will need a new earmold. The following signs may alert you that a new mold is needed.

1. There is leakage of sound ("feedback") which was not a problem before.

2. The mold is easier to put in than when it was new.
3. The mold seems to come out eventhough the child has not been playing with it.

Parent-Home Center
L. B. Spake Hearing and Speech Center
University of Kansas Medical Center
39th & Rainbow Boulevard
Kansas City, Kansas 66103
9-69

INITIAL USE OF HEARING AID

DATE	Number of Minutes Aid is Worn Eacy Day	Sounds Used When Child Has on Aid (Three or More)
example 4-7-69	5 5 5 5	teakettle whistling running water vacuum cleaner radio zipper on clothes doorbell

HOW TO HELP YOUR CHILD BENEFIT FROM HIS HEARING AID

A hearing aid is a deceptive instrument. Many people think that putting the earmold in an ear and turning on the volume to the proper gain setting will enable the wearer of the aid to "hear": THIS IS ONLY PARTIALLY TRUE. The hearing aid will help the child, but he will gain benefit from it only if you, as his parents, teach him to learn to listen.

The following reasons will give you an idea why it is necessary for you to help your child learn how to listen:

1. The hearing aid can only make louder whatever frequencies (tones) your child hears; it does not make those frequencies any clearer.

2. There are many sounds which your child will not hear until he puts on his aid. Because they are new to him, he may hear them; but he will not know what the sound is or what it is coming from. You need to help him identify these new sounds.

3. There are some sounds which your child may have heard without his aid. With his aid on, these sounds will be louder. You will, however, have to teach him to identify these sounds too since they will sound different to him now that they are coming through the hearing aid instead of directly into his ear.

4. There will be so many sounds for your child to listen to that he can not easily remember what object made what sound unless you continually help identify the sound source for him.

Do the following on a consistent basis to teach your child to use his residual hearing and thus give him a reason for wearing his aid (all waking hours and possibly including nap time):

1. Talk in a normal tone of voice, but be expressive.

2. Get your child's attention only by calling his name.

3. Call your child's attention to the following:
    a. Sounds in the surrounding environment (usually outdoors)
        ex. an airplane, honking of a car horn, or a lawnmower
    b. Sounds indoors that occur unexpectedly
        ex. doorbell, telephone
    c. Sounds you make that you prepare the child to listen for
        ex. When you are going to turn on the vacuum cleaner
        When you are going to turn on the water
    d. Sounds you repeat that have occurred unexpectedly
        ex. A dropped utensil: Your child may have heard the spoon drop, but he may not know what object made the sound unless you identify it for him by repeating the action.
    e. Sounds your child makes
        (1) Vocally - ex. when he babbles or vocalizes
        (2) Physically - ex. when he bangs on the table, claps his hands, or etc.

The above teaching techniques require your time all day long - every day - in order for the use of a hearing aid to be meaningful to your child.

You can also utilize those times when your hearing-impaired child is not looking to again stimulate his hearing. You learn the way to auditorily use language as a meaningful, exact input signal. The following techniques are easily incorporated into the special way you talk to your child so that his residual hearing is being used and his hearing aid is being made more functional:

1. After your child has speechread a sentence, use a word for auditory stimulation.

   Example A:

   Speechreading: "Pour the Koolaid into your glass."
   Auditory Stimulation: "Pour, pour, pour."

   Example B:

   Speechreading: "Let's go upstairs."
   Auditory Stimulation: "Up, up, up."

2. When your child is busy pushing his toy car along the floor and cannot look at the moment, use a lower order sound for auditory stimulation.

   Example:

   Whee________________
   Oo__________________

3. Your child can learn to recognize certain language expressions auditorily. These expressions should be followed immediately by an action.

   Example A:

   "I'm going to get you." (then tickle child)

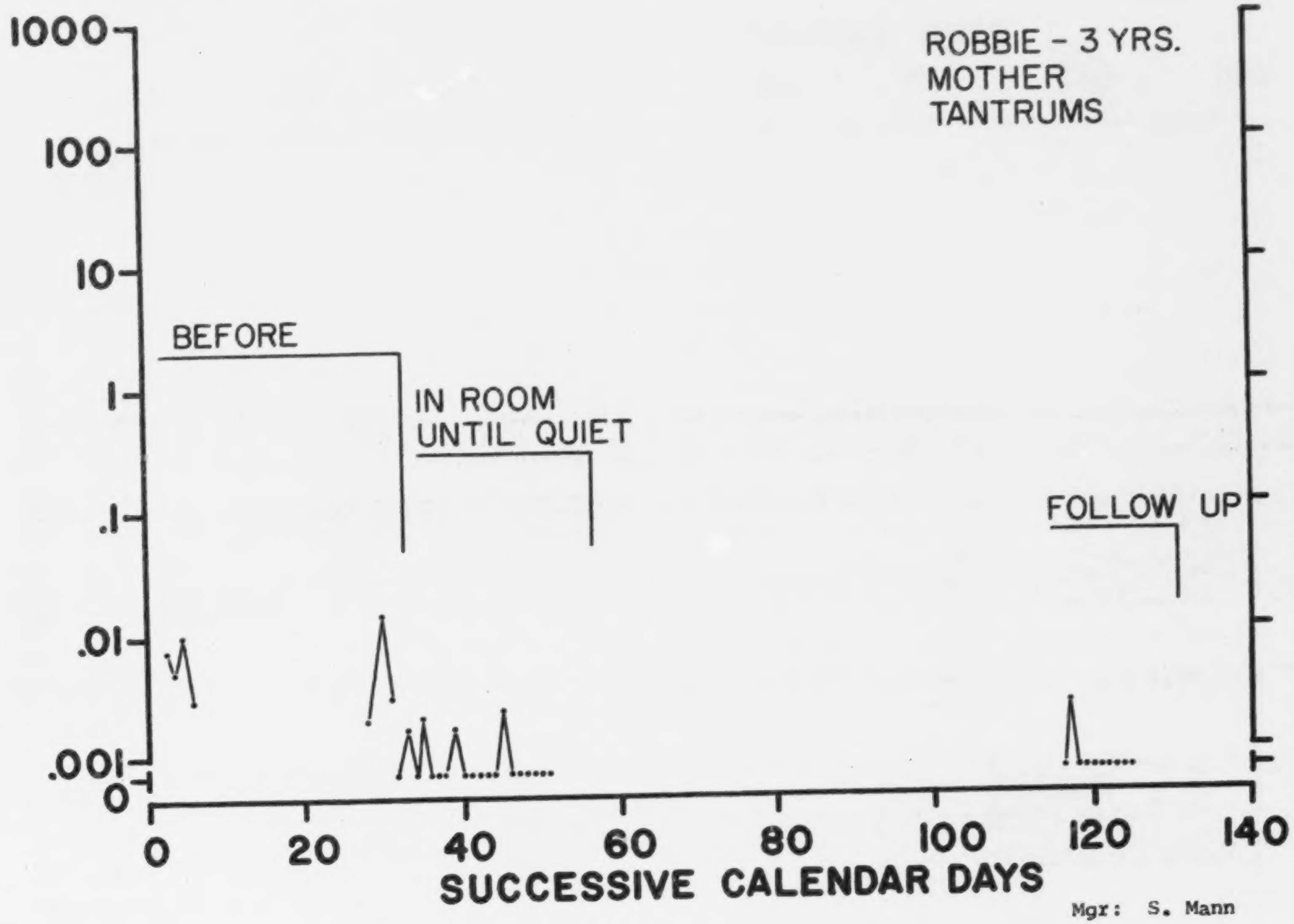
   Example B:

   "Peek-a-boo" (then play this game with your child)

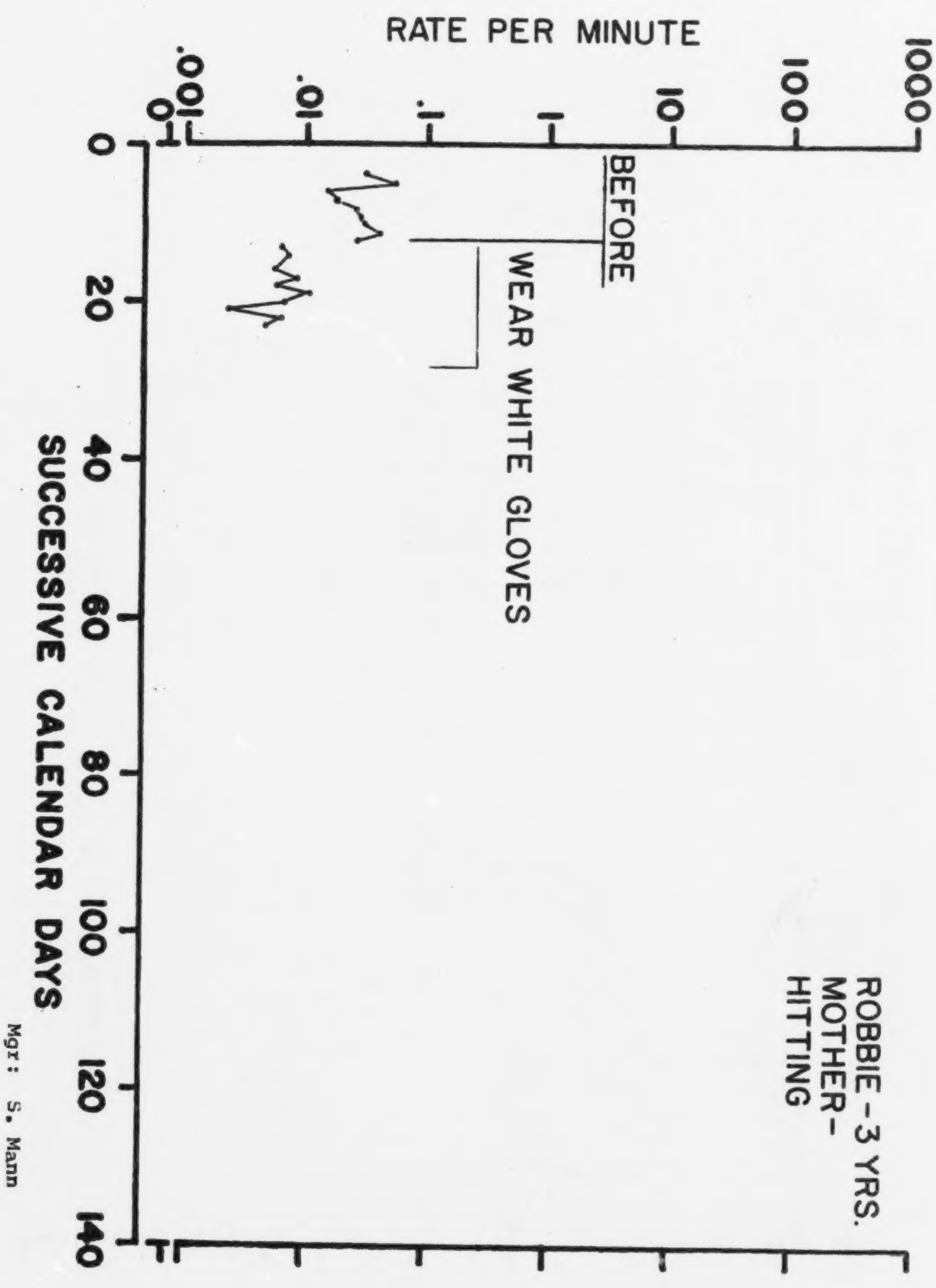
Speech and language for auditory stimulation should be used in the following way to be most effective:

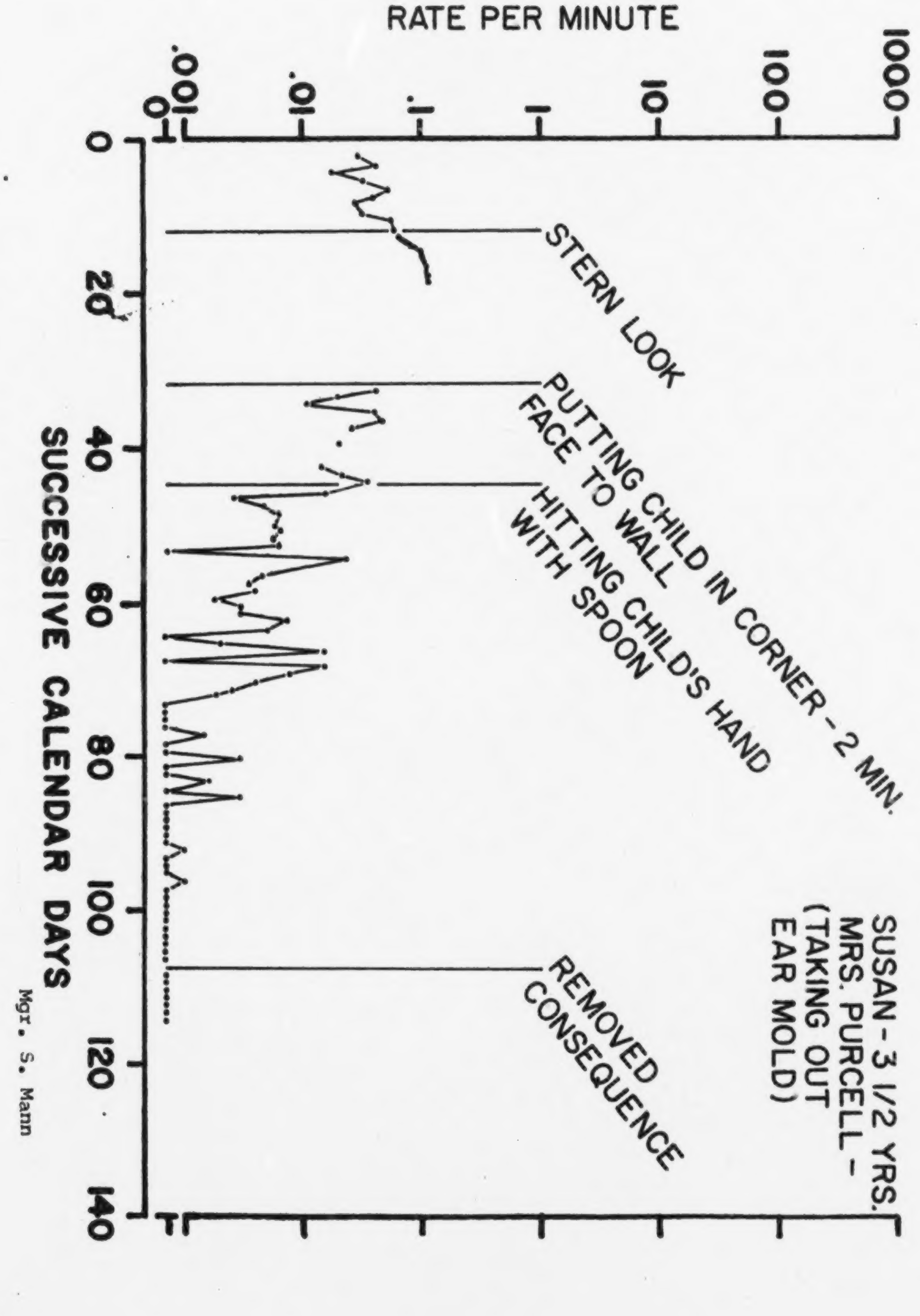
1. Use with expression but in normal intensity level.
2. Talk as close to the aid as possible; but if your child looks up to see what is being said, move back so he can easily speechread what you are saying.
3. Use simultaneously with your movement or child's movement as in example number one.

Parent-Home Center
L. B. Spake Hearing and Speech Center
University of Kansas Medical Center
Kansas City, Kansas
November, 1968


ROBBIE - 3 YRS.
MOTHER
TANTRUMS
BEFORE
IN ROOM
UNTIL QUIET
FOLLOW UP
1000
100
10
1
.1
.01
.001
0
0
20
40
60
80
100
120
140
SUCCESSIVE CALENDAR DAYS

Mgr: S. Mann


ROBBIE - 3 YRS.
MOTHER-
HITTING
RATE PER MINUTE
1000
100
10
1
.1
.01
.001
0
BEFORE
WEAR WHITE GLOVES
0
20
40
60
80
100
120
140
SUCCESSIVE CALENDAR DAYS
Mgr: S. Mann


RATE PER MINUTE
1000
100
10
1
.1
.01
.001
0
0
20
40
60
80
100
120
140
SUCCESSIVE CALENDAR DAYS
STERN LOOK
PUTTING CHILD IN CORNER - 2 MIN. FACE TO WALL
HITTING CHILD'S HAND WITH SPOON
REMOVED CONSEQUENCE
SUSAN - 3 1/2 YRS. MRS. PURCELL - (TAKING OUT EAR MOLD)
Mgr. S. Mann

PARENT EFFECTIVENESS RATING SCALE

NAME________________________________ DATE______________________________

CHILD_______________________________

The following scale is designed to help you assess your "effectiveness" in working with your child. You will note that the scale extends from points, one (1) to seven (7): one indicating "Least Effective", and seven indicating "Most Effective". You are to rate yourself in each area on this seven point scale. Rate all items to the best of your ability. Do not rate between points. Ratings are to be made with reference to your effectiveness during the previous week. When you have completed your ratings assign yourself a "Summary Rating" which to you best characterizes your effectiveness based on this scale.

1. Used "control" to achieve looking behavior	1	2	3	4	5	6	7
2. Praised child for attempts at imitation	1	2	3	4	5	6	7
3. Used speech for auditory training	1	2	3	4	5	6	7
4. Used "I hear that"	1	2	3	4	5	6	7
5. Pulled back on object to allow child to look for longer periods	1	2	3	4	5	6	7
6. Illustrated environmental sounds with pictures	1	2	3	4	5	6	7
7. Contrived listening experiences for child	1	2	3	4	5	6	7
8. Split up the verb	1	2	3	4	5	6	7
9. Asked child meaningful questions	1	2	3	4	5	6	7
10. Talked when child was not looking	1	2	3	4	5	6	7
11. Pointed out sound of door slamming	1	2	3	4	5	6	7
12. Coordinated sentences with the action	1	2	3	4	5	6	7

13.	Repeated sounds for child to listen to	1	2	3	4	5	6	7
14.	Used appropriate language	1	2	3	4	5	6	7
15.	Exaggerated speech when talking to child	1	2	3	4	5	6	7
16.	Used pronouns	1	2	3	4	5	6	7
17.	Pointed out environmental sounds	1	2	3	4	5	6	7
18.	Talked during "voluntary" looks	1	2	3	4	5	6	7
19.	Babbled in response to child's noises	1	2	3	4	5	6	7
20.	Pointed out objects to talk about	1	2	3	4	5	6	7
21.	Praised child for correct responses	1	2	3	4	5	6	7
22.	Talked to child at distance of 6-8 inches from aid	1	2	3	4	5	6	7
23.	Used complete sentences	1	2	3	4	5	6	7
24.	Used fingerspelling to aid comprehension	1	2	3	4	5	6	7
25.	Illustrated conversation with pictures	1	2	3	4	5	6	7
26.	Got down to child's level before speaking	1	2	3	4	5	6	7
27.	Checked aid at least three times each day	1	2	3	4	5	6	7
28.	Used gestural cues	1	2	3	4	5	6	7

Summary Rating____________

Foster
1969

Meeting #3

January 18, 1968

SCHOOLS

3:00 Call meeting to order
Topic - schools
Announcements
1. Attendance record
2. Availability of information on Gallaudet, Technical School, and all schools
3. Dr. Proud at March meeting - March 21
4. Suggestion Box
5. Out of town person needs place for child to stay
6. Participants give information sheets to teachers

Explanation of procedure

3:15 Begin first session - timer intervals of 15 minutes.
A. Fulton
Olathe
B. Public Schools in Missouri
C. Public Schools in Kansas
D. Private Midwestern Schools
E. Private Eastern Schools
F. Preschools
G. Coffee

Each person had a name card with alphabet letter on it. They followed a sequence from table to table (see chart) according to letters (See Parent-Home Directory)

5:15 Dismissed

Equipment needed

School summary
Gallaudet
Technical School
Sheets to make notes
Attendance record
pencils
suggestion box
signs for tables
slips of paper
for suggestion box
timer

Attendance: 42 Evaluation: See tabulated sheet following.

Meeting #1   September 17, 1968

1968--69   OVERVIEW

Why have a Parent-Home Center?

What is a hearing loss:
    Presented with -
      overhead projector with transparencies
      record player and record

Why a child needs special education.
    Presented with -
      2 children
        a) beginning the program
        b) completed one year program

Why parents are important.
    Presented with -
      chalkboard

The Parent-Home Center in retrospect
    Mr. & Mrs. Jerry Davies

Attendance: 25 (Female - 20 and Male - 5)

Evaluation: Indirect. Groups asked to write list of subjects on which more information was desired.

__Equipment__

Name tags
paper and pencils

Overhead projector
record player
chalkboard
transparencies of audiogram
Record "How They Hear"

February 20, 1969

This program presented the idea of speechreading.

		Equipment
3:00 - 3:10	Announcements Answers to questions from the parents received at the previous meeting.	Pencils, name tags, pins, pads of paper, recording
3:10 - 3:30	What are the visual clues of speech? Presentation of the visibility of the consonants and the vowels. The words "pole", "bowl", and "mole" were used to illustrate the homophenous feature of speechreading situational clues.	Pictures from magazines illustrating mouth position, 15 small mirrors.
3:30 - 4:00	Workshop. Begin The audience was divided into groups. Each group was asked to choose a four word sentence for speechreading. Group 1 formed a circle in the center of the room facing outward. Group 2 formed a circle around Group 1 facing inward. Group 2 moved to the right each time a whistle was blown and each person in the circle repeated the phrase they had agreed upon. When they had completed the circle Group 1 repeated the same action. Group discussion followed concerning insights gained about speechreading. Presentation was given by one of the parents relating to tax deductable items in connection with the expense involved remediating the disability of children with hearing impairments.	Whistle
4:00 - 4:30	Refreshments	
4:30 - 4:50	Combining what is heard and what is seen. The recording "How we Hear", was used. Material given on the record was first presented only visually through speechreading. This was followed by the record itself, using the band that eliminates frequencies above 500 cps. Finally speechreading and the recording were combined.	Record player, "How We Hear"
4:50 - 5:00	Parents were asked to evaluate the meeting in written form.	Box for written evaluating
5:00	Two hand-outs were given. 1) Calculating the Visibility of Speech 2) Summary of lecture given the previous meeting on "Behavior" by Richard Whelan	

Total Attendance: 39

Evaluation: Written

March 20, 1969 AUDITORY TRAINING

		Equipment
	Prior to the meeting two sections of programmed learning were forwarded to the parents along with the letter notifying them of the meeting. These were 1. Anatomy of the Ear, and 2. The Measurement of Hearing. Parents were also asked to bring: a) Their own child's audiogram which they had received at a previous meeting, and b) the completed programmed learning.	
	The programmed learning was checked at the door to see that they were filled out and then each person was given a colored lifesaver candy. There were three colors available and the giving was rotated so that the group was automatically broken into three groups at the time of the exhibits and refreshments.	lifesaver candies in 3 colors, two large tables for exhibits, name tags, and pens.
	Four weeks before the meeting Mr. Ken Palmer of the Bell Telephone Company was contacted and asked to set up an exhibit. At the same time Mr. Charles Murdock, a distributor of hearing amplification devices, was asked to set up an exhibit of amplification devices other than hearing aids and a loop inductance system.	
3:00 - 3:10	Announcements and answers to questions from the previous meeting.	
3:10 - 3:30	"Listening with Amplification". (This was a summary of the level at which speech is normally heard, related to specific hearing losses and also related to hearing with hearing aids.)	Overhead projector Transparency of audiogram showing levels of mild, moderate, severe, and profound hearing losses
3:30-4:30	Total group was divided into three small groups based on the colored lifesaver given at the door and already consumed. Groups were rotated between - 1. Loop-inductance system in the preschool classroom. 2. Exhibits by the Telephone Company and Hearing Amplification devices. 3. Refreshments. (Each group was allowed twenty minutes in each meeting.)	
4:30 - 4:55	"Steps in Learning to Listen" (This was a demonstration of the steps in learning to listen with a hearing impairment. The audience was involved in the demonstration.) Each parent was given a printed explanation of auditory training.	noisemakers, 3 page handout on auditory training

Total attendance: 33 Evaluation by the parents: Written (see summary)

LIST OF BOOKS AVAILABLE FROM THE PARENT-HOME CENTER LIBRARY

AMPLIFICATION

Bellefleur, Philip A., Inductance Loop Amplification - Its Adaptation to Television for the Deaf.
Hardy, William G., Hearing Aids for Deaf Children?
Leckie, Doris, and Daniel Ling, Audibility with Hearing Aids Having Low Frequency Characteristics.
Pollack, Doreen C., and Marion P. Downs, A Parent's Guide to Hearing Aids for Young Children.
Ronnei, Eleanor C., and Joan Porter, Tim and His Hearing Aid.
Smith, Fale M., Telephone Service for the Totally Deaf.
Sortini, Adam J., Hearing Aids for Preschool Children.

AUDITORY TRAINING

Birkenshaw, Lois, Teaching Music to Deaf Children.
Downs, Marion P., Identification and Training of the Deaf Child - Birth to One Year.
Jeffers, Janet, Formants and the Auditory Training of Deaf Children.
Ling, Agnes H., Advice for Parents of Young Deaf Children: How to Begin.
Oyer, Herbert J., Auditory Communication for the Hard of Hearing.
Ross, Mark, and Donald R. Calvert, The Sematics of Deafness.
Watson, T. J., The Use of Residual Hearing in the Education of Deaf Children.
Wedenberg, Erik, Experience from 30 Years, Auditory Training.

BIBLIOGRAPHY

Alexander Graham Bell Association, Bibliography on Deafness.

BOOKS

Newton, Mary Griffin, Books for Deaf Children.

CHILD GROWTH AND DEVELOPMENT

Association for Childhood Education International, Early Childhood - Crucial Years for Learning.
Association for Childhood Education International, How Do Your Children Grow?
The Canadian Mental Health Association, How to Know Your Child.
Children's Bureau, Your Child From 1 to 3.
Children's Bureau, Your Child From 1 to 6.
Children's Bureau, Your Child From 3 to 4.
Children's Bureau, Your Child From 6 to 12.
Darrow, Helen Fisher, Research: Children's Concepts.
New York Department of Health, The Preschool Years.
Olsen, Willard C. and John Lewellen, How Children Grow and Develop.
Ross Laboratories, The Phenomena of Early Development.
Spock Benjamin, Dr. Spock Talks with Mothers.
Wolf, Katherine M., and Aline B. Auerbach, As Your Child Grows: The First Eighteen Months.

CHILD GUIDANCE

American Academy of Pediatrics, Obedience - Means Saftey for Your Child.
Association for Childhood Education International, All Children Have Gifts.
Association for Childhood Education International, Children and TV.
Association for Childhood Education International, Children's Views of Themselves.
Association for Childhood Education International, Discipline.
Auerbach, Aline B., How To Give Your Child a Good Start.
Auerbach, Aline B., The Why and How of Discipline.
Barman, Alicerose, and Freda Kehn, Your Child and the People Around Him.
Child Study Association of America, Behavior: the Unspoken Language of Children.
Child Study Association of America, Facts of Life for Children.
Child Study Association of America, What To Tell Your Children About Sex.
Children's Bureau and Walt Kelly, Pogo Primer for Parents.
Davidson, Barbara Kay, There Was A Little Boy (Play).
Department of National Health & Welfare, Bed-Wetting.
Department of National Health & Welfare, Building Self-Confidence.
Department of National Health & Welfare, Destructiveness.
Department of National Health & Welfare, Discipline.
Department of National Health & Welfare, Fear.
Department of National Health & Welfare, Illness.
Department of National Health & Welfare, Jealousy.
Department of National Health & Welfare, Lying and Stealing.
Department of National Health & Welfare, Obedience.
Department of National Health & Welfare, Shyness.
Department of National Health & Welfare, Temper.
Department of National Health & Welfare, Thumb Sucking.
Department of National Health & Welfare, What Every Child Needs.
Escalona, Sibylle, Understanding Hostility in Children.
Foster, Constance, Developing Responsibility in Children.
Hymes Jr., James L., Enjoy Your Child - Ages 1, 2, and 3.

CHILD GUIDANCE CON'T.

Jonsson, Arvid R., Camping for Deaf Children.
Krug, Othilda, and Helen L. Beck, A Guide to Better Discipline.
Levine, Milton I., and Jean Seligmann, Helping Boys and Girls Understand Their Sex Roles.
Mental Health Materials Center, Plays for Family Life Education.
Mohr, George J., When Children Face Crises.
Montagu, Ashley, Helping Children Develop Moral Values.
Neisser, Edith G., How to Live with Children.
Osborne, Ernest, Democracy Begins in the Home.
Puner, Helen, Helping Brothers and Sisters Get Along.
Ridenour, Nina, Building Self-Confidence in Children.
Ross, Helen, Fears of Children.
Ross Laboratories, Developing Toilet Habits.
Ross Laboratories, How Your Child Learns About Sex.
Ross Laboratories, When Your Child is Contrary.
Ross Laboratories, When Your Child is Unruly.
Ross Laboratories, Your Children and Discipline.
Ross Laboratories, Your Child and Sleep Problems.
Ross Laboratories, Your Child's Fears.
Smith, Judith M., and Donald E. P. Smith, Child Management: A Program for Parents
Stirling, Nora, According to Size (Play).
Stirling, Nora, Fresh-Variable Winds (Play).
Stirling, Nora, Tommorow Is A Day (Play).
Stirling, Nora, What Did I Do? (Play).
Strang, Ruth, Helping Children Solve Problems.
Watson, Marjorie E., and Irving M. Brown, Help Wanted (Play).
Weitzman, Ellis, Guiding Children's Social Growth.
Wolf, Anna W. M., Helping Your Child to Understand Death.
Wolf, Katherine M., The Controversial Problem of Discipline.

FILMS

Association for Childhood Education International, Films for Early Childhood Education.
The Volta Bureau, Films on Hearing and Deafness.

HARD-OF-HEARING

Children's Bureau, The Child Who Is Hard-of-Hearing.

HEARING IMPAIRED - GENERAL

Alexander Graham Bell Association, If Your Child Is Deaf.
Alexander Graham Bell Association, My Child Is Deaf, Tell Me What To Do.
Alexander Graham Bell Association, Our Deaf Children in a Hearing World.
Bloom, Freddy, Our Deaf Children.
Canfield, Norton, You and Your Hearing.
Hardy, William G., Doctor, Is My Baby Deaf?
Hardy, William G., Human Communication - Ordered and Disordered.
Kansas State Department of Health, The Ten Commandments of Hearing.
Lane, Dorothy, Auditory Disability in Young Children.
Lane, Helen, No Time for Complacency.
Larson, Linda, Deafness.
Lassman, Grace, and Harriet Montague, The Deaf Baby.
McGreevy, Grace, I'm Thirsty Too!
Morkovin, Boris V., Through the Barriers of Deafness and Isolation.
Rushford, Georgina, Glossary of Terms Relating to Children with Hearing Problems.
Silver, Rawley, Art for the Deaf Child - It's Potentialities.
Stone, Alice V., Oral Education - A Challenge and A Necessity.
Volta Bureau, Pediatrics and Disorders of Communication.

INTELLIGENCE

Gesell, Arnold, The Psychological Development of Normal and Deaf Children in Their Preschool Years.
Osler, Sonia F., The Nature of Intelligence.

LANGUAGE

Association for Childhood Education International, et. al., Children and Oral Language.
Duffy, John K., i/t/a and the Hearing Impaired Child.
Ewing, Sir Alexander W. G., Linguistic Development and Mental Growth in Hearing Impaired Children.
Harris, Grace, and Larry Weber, Babies with Hearing Losses.
Myklebust, Helmer R., Diagnosis, Learning and Guidance.
Northcott, Winifred, Language Development Through Parent Counseling and Guidance.
Volta Bureau, Language Acquisition.

MULTIPLE HANDICAPS

Curriculum Guides - Educable Mentally Retarded.
Bureau of Education for the Handicapped, A Condensation of a Series of Addresses Relating to the Treatment, Rehabilitation and Education for Children.
Monaghan, Alice, Educational Placement for the Multiply Handicapped Hearing Impaired Child.
National Association for Mentally Retarded, The Mentally Retarded - Their New Hope.
President's Committee on Mental Retardation, Hellow World!
President's Committee on Mental Retardation, MR 68, The Edge of Change.
Secretary's Committee on Mental Retardation, Mental Retardation Activities.
Secretary's Committee on Mental Retardation, Mental Retardation Publications.
Shere, Marie Orr, The Cerebral Palsied Child.
Stolp, Lauren B., A Curriculum for the Slow-Learning Deaf Child.
Withrow, Frank B., Acquisition of Language by Deaf Children with Other Disabilities.

PARENTS

Adams, Robert D., Problems Encountered by Parents of Deaf Children.
Arnstein, Helene S., When A Parent Is Mentally Ill: What To Say to Your Child.
English, Spurgeon, and Constance Foster, A Guide to Successful Fatherhood.
Fuller, Carl W., Your Child Maturity, and You: A Talk with Parents.
Jenkins, Gladys Gardner, A Guide for Family Living.
McDonald, Eugene T., Understand Those Feelings.
Menninger, William C., Self-Understanding.
Neisser, Walter & Edith, Making the Grade as Dad.
Northcott, Winifred N., Preparing Your Child for His First Year Away From Home.
Ross Laboratories, Feelings of Conflict in New Parents.
Ross Laboratories, How To Be A Parent - And Like It.
Simon, Anne W., Stepchild in the Family.
Spock, Benjamin, Dr. Spock Talks About Problems of Parents.
Thomson, Helen, The Successful Stepparent
Weingarten, Voilet, The Mother Who Works Outside the Home.
Wolf, Anna W.M., and Lucille Stein, The One-Parent Family.
Wolf, Anna W. M., and Margaret C. Dawson, What Makes A Good Home?

PLAY (CHILDREN'S WORK)

Association for Childhood Education International, Children Can Make It!
Association for Childhood Education International, Play Is Valid.
Boston Children's Medical Center and Elizabeth M. Gregg, What To Do When "There's Nothing to Do".

RESEARCH

Brown, Kenneth S., Louise A. Hopkins, and Ruth B. Hudgins, Causes of Childhood Diseases.
Doyle, John B., et. al., Electrical Stimulation in Eighth Nerve Deafness.
Konigsmark, Bruce W., and Victor A. McKusick, Hereditary Deafness.
Masland, Richard I., Rubella Can Rob Children of Their Hearing.
National Institutes of Health, Hearing Loss - Hope Through Research.
Nober, E. Harris, Diagnosis and Meaning of Deafness.
Office of the Secretary, HEW, Progress in Research - on Communication.
Public Health Service, Blood and the Rh Factor.
Vernon, McCay, Characteristics Associated with Post-Rubella Deaf Children: Psychological, Educational and Physical.
Volta Review, Research - 1963.

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Alexander Graham Bell Association, Interim Guidelines for Educational Programs for Hearing Impaired Children.
American Annals of the Deaf, Directory of Services for the Deaf in the United States.
American Speech and Hearing Association, Speech Pathology and Audiology.
Association for Childhood Education International, Basic Propositions for Early Childhood Education.
Breunig, H. Latham, An Analysis of a Group of Deaf Students in Colleges with the Hearing.
Bureau of Education for the Handicapped, Directory of Special Education Personnel in State Education Agencies.
Bureau of Education for the Handicapped, Education of Handicapped Children.
Bureau of Education for the Handicapped, Elements of Teacher Preparation Programs in the Education of Emotionally Disturbed Children.
Bureau of Education for the Handicapped, Speech and Hearing Problems: New Roles in the Schools.
Burgess, Helen Steers, How To Choose A Nursery School.
Falconer, George A., Teaching Machines for Teaching Reading.
Johnson, E. W., Let's Look at the Child Not the Audiogram.
Johnston, Evan V., and D. Robert Frisina, A Study of the Need for Academic Classroom Teachers of the Deaf.
Lerman, Alan, Vocational Adjustment and the Deaf: A Guide and Annotated Bibliography.
O'Connor, Clarence D., The Development of Education for the Deaf in the U.S.A.
Ridenour, Nina, The Children We Teach.
Ross Laboratories, Your Child's Progress in School.
Sgouris, Katherine, It's Not the Method - It's the Technique that Makes the Difference.
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Social and Rehabilitation Service, HEW, Traineeships for Graduate Study in Psychology September, 1968.
Volta Bureau, Will You Be My Teacher?

SPEECH

Greene, M. C. L., Learning to Talk.
Marge, Michael, The Gift of Speech.
Rotter, Paul, The Parent's Role In Encouraging Speech Growth.
VanRiper, Charles, Helping Children Talk Better.

SPEECHREADING

Costello, Mary Rose, Language Development Through Speechreading.
Dicarlo, Louis M., Much Ado About the Obvious.
O'Neill, John J. and Herbert J. Oyer, Visual Communication for the Hard-of-Hearing: History, Research and Methods.
Pronovost, Wilbert, Developments in Visual Displays of Speech Information.

VISION

Children's Bureau, Your Preschool Child's Eyes.
Gill, B. G. and Franklin M. Foote, Eye Tests for Children.
Suchman, Rosslyn Gaines, Visual Impairment Among Deaf Children - Frequency and Educational Consequences.

VOICE

Boone, Daniel F., Modification of the Voices of Deaf Children.

PARENT-HOME CENTER
MASTER FILE SHEET

NAME ____________________ APPT. ________ TEACHER __________

PARENTS ____________________ TELEPHONE __________

ADDRESS ____________________ WORK (FATHER) __________

____________________ (MOTHER) __________

BIRTHDATE ____________________ HOSPITAL NUMBER __________

SIBLINGS NAME AGE BABYSITTER __________

NAME	AGE

REFERRED BY ______________________________

____

ATTENDED PARENT INSTITUTE __________ ETIOLOGY __________

AWARE OF HEARING LOSS ____________________

HEARING TESTS

DATE	PLACE	AUDIOLOGIST	TOLD ___	KEPT ___

PSYCHOLOGICAL ____________________ I.Q. __________

STARTED AT PHC __________ FINISHED __________ NUMBER OF SESSIONS _____

VIDEOTAPING:

Date	No. of sessions	Mother	Father

REPORTS CONTAINED WITHIN __________ DATE ____________________

PARTICIPATION IN PHC

AGE	DATE	NO. OF SESSIONS	MOTHER	FATHER	OTHERS	ACTIVITY

L. Angel, 1969

Sheet No. ______

UNIVERSITY OF KANSAS MEDICAL CENTER
HEARING AND SPEECH DEPARTMENT
PARENT-HOME CENTER

Date ______

Father's Name: ______ (Last) (First) (Middle) Telephone: ______

Address: ______ Father's occupation: ______

Suspected child's hearing loss: ______ (Date) Confirmed: ______ (Date) By: ______

Father's highest level of education: ______

			Type contact			Program offered			Model		
Date	Kept Appt.	Psyc. Stage	Indiv. Appt.	Group Meet.*	Other	Instruct.	Practicum	Other	Stimulus	Response	Reinforcem
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											

TOT Made ______
Kept ______
ax. ______

*T-total group
S-small group

Verbal-Vb.
Vis.Aid-VA
Auditory Aid-AA

Signed ______
Title ______

Instructions: Date, sheet, and line number must coincide with father and child data sheets.

J. Omer, 1967

Sheet No. ________ Date ____________

UNIVERSITY OF KANSAS MEDICAL CENTER
HEARING AND SPEECH DEPARTMENT
PARENT-HOME CENTER

First contacted by ________

Mother's Name: ______________________________ Telephone: ____________________
(Last) (First) (Middle)

Address: ______________________________ Mother's occupation: ______________

Suspected child's hearing loss: __________ Confirmed: __________ By: ______________
(Date) (Date)

Mother's highest level of education: ______________ Her Father's occupation: ______________

			Type contact			Program offered			Model		
Date	Kept Appt.	Psyc. Stage	Indiv. Appt.	Group Meet.*	Other	Instruct.	Practicum	Other	Stimulus	Response	Reinforcement
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											

TOT Made ___
Kept ___
Ex. ___

*T-total group
S-small group

Verbal-Vb.
Vis.Aid-VA
Auditory Aid-AA

Signed ____________________

Title ____________________

Instructions: Date, sheet and line number must coincide with father and child data sheets.

J. Omer, 1967

Sheet No. ______________

UNIVERSITY OF KANSAS MEDICAL CENTER
HEARING AND SPEECH DEPARTMENT
PARENT-HOME CENTER

Date ______________

Child's Name:: ______________________________ Birthdate: __________ Telephone __________
(Last) (First) (Middle)

Address: ______________________________ Hosp. # __________ Audiogram attached ______ (Check X)

Siblings: Male _,_,_,_,_ (ages) Female _,_,_,_,_ (ages) Etiology: ______________ Comments: __________

			Progress					Program Offered					
Date	Griffiths Rec. Exp.	Boone Rec. Exp.	Speech Read.*	Vocal Expr.	Hear. Aid	Sound Response	Social Maturity	Visual	By**	Auditory	By**	Behavioral	By**
1.													
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													
11.													
12.													
13.													
Tot.													

Quarterly Progress

*Looks per min.

** M-mother
F-father
T-teacher
A-Audiologist

Signed ______________

Title ______________

J. Omer, 1967

Instructions: Date, sheet and line number must coincide with mother and fathers data sheets.

I. Activity

- A. Person carrying out activity
- B. Preparation
  - 1. Brought materials
  - 2. Sentences written in notebook
    - a. good
    - b. poor
    - c. too long
    - d. word to emphasize on end

II. Parent Progress

- A. Presentation of activity
  - 1. Quick enough start to get interest
  - 2. Had to change plan to get interest
  - 3. Got looks by:
    - a. holding object
    - b. stopping action
    - c. calling name
    - d. holding child's hand on object
- B. Language or Talking
  - 1. Appropriate
  - 2. Gave sentence when look given
  - 3. Did not ask questions
  - 4. Used verbs
  - 5. Gave sentence before action
  - 6. Voluntary language is appropriate
    - a. can think of something to say
  - 7. Uses inflection in talking
  - 8. Used pronouns in sentences
  - 9. Did not use preposition at end of sentence
  - 10. ___ of ~~statements~~ child say in ___ minutes
  - 11. Praises when child vocalizes and parent says "I hear you."
- C. Speechreading Techniques
  - 1. Got on child's eye level
  - 2. Kept head still
  - 3. Got best light on speaker's face
  - 4. Praises in some way
  - 5. Did not exaggerate - normal speed
  - 6. Did not touch
  - 7. Did not point
- D. How does parent discipline

III. Auditory Status

- A. Child ~~condition~~ed to
  - 1. large cricket
  - 2. small cricket
  - 3. hammer
  - 4. voice
  - 5. other
- B. Child wears aid ____ hrs. per day
  - 1. All waking hours
  - 2. All waking hours except outdoors

C. Parent uses "I hear __" to all sounds around house

D. Listens with headphones to music:
  1. Know when its off and on
  2. Claps or beats drum to music
  3. Marches to music
  4. Listens to Hi! Record

E. With headphones or aid can discriminate:
Noisemakers ____________________
Records - Utley ____________________
Scot-Foreman's ____________________
____

F. At home discriminates sound of:
____
____
____
____

G. Localizes sound from: 10 feet
other room
____

IV. Child Progress

A. Child looks occasionally
B. Child looks often
C. Child is usually interested in activity if it is interesting
D. Span of attention
  1. long
  2. short
E. Babbles at home
F. Babbles at Parent-Home Center
G. Gives inflection with m__
whee!
oo
ou
ō
other phonemes ____________________
H. Imitates mouth movements
I. Speechreading of: ____________________
____
____
____
____
J. Voice quality ____________________
K. Imitates words
  1. Recalls words
  2. phrases
  3. Uses two or three word sentences
L. Child does not need behavioral management

V. Instructor's Comments, etc.

A. Gave ways to improve activity
  1. Techniques
  2. Language
  3. Voice quality

B. Praised good points: 1 ____________										
2 ____________										
3 ____________										
C. Demonstrate procedure of ____________										
D. Talk over next steps										
E. Give new assignments with parents										

R. Mathews, 1968

Assessment by Videotape

(Child and examiner are seated on two chairs
at table. An additional chair is placed at
the table.) The Parent(s) are in the room.

Child		Equipment
Directions: 1. Examiner demonstrate 3-block tower - tear down, encourage child to replicate. Follow with: 3-block chair 5-block bridge 7-block bridge		7 blocks
Call child by name While child is playing with blocks, hold large cricket 2" from child's center back and sound. If he responds, follow with: small cricket then baby rattle, the DIP Auditory Discrim-Test (Practice Plates B and D). Plate B - Say, "where's the ______ (boat) Plate D - Kite Plate VI 20 - Boy Plate VI 24 - Bone Plate VP 29 - Feet Plate VIP 43 - Thumb If he does not respond, sound drum.	Response to sound	large cricket small cricket baby rattle drum DIP Auditory Discrim. Test
Directions: 2. Say, "Find Mama." (Or Daddy)	Speechreading	
If the child looks at parent, place doll, car, and shoe on table. Say, "Give me the baby." (Hold out hand.) If response is correct, say "Show me the eyes" "Show me the nose" SShow me the mouth" Put the doll clothes on the table (put shirt, pants, coat, socks) and say, "Give me the shirt" "Give me the pants" "Give me the coat Tip Test - B1, B2, B3 B1 - Point to the ______ pie, airplane B2 - Point to the ______ gum, hand		doll shoe car doll clothes shirt pants coat socks Tip Test
Directions: 3A Show first plate of Peabody Picture Vocabulary Test. Point to item listed. Begin on page 1 car (if no response to Peabody Test, proceed to 3B). If child responds, continue through Peabody until child stops responding.	Speech	Peabody Picture Vocabulary Test

knife (p.2) Baby (p.3)
dog (p.4) shoe (p.5)
hand (p.6) boat (p.7)
key (p.8) bell (p.9)

3B Prepare to leave room, pause at door and say, "bye" attempting to elicit speech from child. Indicate to parent to seat herself-himself at table with child.

4. During parent/child sequence initiate loud sound (e/g/, ring large bell).

J. Omer, 1968

SCORING SHEET I
(Videotape Assessment)
Child with Teacher

Scored by: ____________________ Child's Name ____________________

Position: ____________________ Birthdate: ____________________

DIRECTIONS: Check (✓) for correct response.

1. Response to sound. Check (✓) if wearing hearing aid. Check if child turns head toward sound source.
2. Speechreading. Check (✓) if child makes an appropriate response to command or request.
3. Speech. Check (✓) if expresses correct word. (Correct vowel pattern is acceptable.)

Response to sound

Date of Videotape				
Day				
Mo.				
Yr.				
Tape No.				
No. Weeks Hearing Aid				
1. Drum				
2. Large Cricket				
3. Own Name				
4. Small Cricket				
5. Rattle				
Speech				
6. Boat				
7. Kite				
8. Boy				
9. Bone				
10. Feet				
11. Thumb				

Speechreading

Date of Videotape				
Day				
Mo.				
Yr.				
Tape No.				
1. Find Mama (looks off camera)				
2. Give me the baby				
3. Show me the eyes				
4. Show me the nose				
5. Show me the mouth				
6. Give me the shirt				
7. Give me the pants				
8. Give me the coat				
Book				
9. Point to the airplane				
10. Point to the pie				
11. Point to the gum				
12. Point to the hand				

Speech

Date of Videotape				
Day				
Mo.				
Yr.				
Tape No.				
1. Bye (imitative)				
Book				
2. Car				
3. Knife				
4. Baby				
5. Dog				
6. Shoe				
7. Hand				
8. Boat				
9. Key				
10. Bell				

J. Omer, 1968

SCORING SHEET II
CHILD WITH PARENT

Scored by: ______________________ Child's Name ______________________

Position: ______________________ Birth Date ______________________

EQUIPMENT: Automatic Timer
Two Counting Devices

DIRECTIONS: Record date of videotape
Record time of tape: I = Initial
12 = 12 weeks
24 = 24 weeks
F = Final
Set timer for five minute interval
Hold one counting device in each hand
Count Item 1 with counter in left hand. Count Item 2 with counter in right hand.
Record each score. Compute the difference between Item 1 and 2 and record in Item 3. Repeat for Items 4, 5, and 6.

SPEECHREADING			RESPONSE TO SOUND		
1	2	3	4	5	6
Number of times child looks at parents face. (A "look" is defined as each time the child returns his gaze to the parents face.)	Number of times parent talked when child looked.	Difference Score	Number of sounds that occur on videotape.	Number of sounds to which parent called child's attention.	Difference Score
Date of Videotape	Date of Videotape		Date of videotape	Date of Videotape	
Day	Day		Day	Day	
Mo.	Mo.		Mo.	Mo.	
Yr.	Yr.		Yr.	Yr.	
Tape No.	Tape No.		Tape No.	Tape No.	

J. Omer, 1968

Appendix B

BEHAVIOR MODIFICATION
# of a
HEARING IMPAIRED CHILD

Education 118
Dr. R. Vance Hall

Lynne Angel
January 16, 1970

POPULATION: One hearing impaired child, Aimee, from the time she was 18 months old to the time she was 24 months old.

SETTING: The University of Kansas Medical Center, Parent Home Center, a program for the parents of hearing impaired children, an experimental project funded by the U.S. Office of Education to explore the success of early childhood education for the hearing impaired child. The child and her mother were seen on a weekly basis for one hour.

OPERATIONAL DEFINITION OF THE BEHAVIOR TO BE MODIFIED: Any non-acceptable behavior which includes vocalization: crying, wailing, sobbing, gasping, whining, whimpering. unhappy vocalizations.

METHOD OF RECORDING BEHAVIOR: Observational Recording technique, duration. During the 60 minute session I recorded on paper every time she exhibited the above described behavior and for how long according to my wrist watch.

RELIABILITY: The secretary in the next room also kept a cumulative record of the minutes with a stopwatch. We had an overall percent of agreement of 98.25.

BASELINE BEHAVIOR: The behavior exhibited by this little girl was a very independent, stubborn behavior. Sensory deprivation creates a frustration which manifests itself in many different ways, this particular way for Aimee. When I came into Aimee's world, she became very dependent on her mother. She relied more on her mother's presence than her authority. She seemed to resent anyone's imposition on her actions, any limitations at all. The mean behavior was 45; that is, she cried on the average of 90% of every 60 minute period. The baseline was not a stable one, different factors contributing. For example, on July 21, Aimee received her hearing aid for the first time which affected her behavior for two weeks. Then it increased again.

MODIFICATION PROCEDURES: The mother chose as a consequence, putting Aimee on a small chair in the next room with the door practically shut. This ideally would be instituted not only at the Parent-Home Center, but also at home, or wherever Aimee was by her mother, father, aunt, and myself. Aimee was allowed to come out when she had ceased this behavior, on her own and continue with whatever was going on before. If she did not cooperate, she was again placed on the chair.

RESULTS: The behavior quickly lowered itself to a mean level of 13.5 or 22.5% of the 60 minute session. The first intervention lasted 7 weeks. The week before the reversal she did not exhibit the non-acceptable behavior.

SCIENTIFIC VERTIFICATION: An unplanned reversal took place. On November 18 Aimee's grandmother accompanied her and her mother. She had not been included in the experiment. Aimee sensed this and turned to her each time she wanted attention, or sympathy, and got it. With this alternative present Aimee's mother gave up and did not continue to punish Aimee which raised her mean level of behavior to 60, 100%.

INTERVENTION$_2$: The following week her mother again began punishing Aimee, on a more consistent basis than ever before which decreased the behavior immediately. For the next 7 weeks she maintained a mean level of 5, 9.9%. The study ended here on the graph. No post checks were done.

DISCUSSION: I feel the study was very successful considering how many uncontrolled variables there were: the length of time the mother followed through at home, the child's age (this covered a six month period of time during which Aimee was growing and developing in many ways, all of which may not have been visible to us. Her level of comprehension of the desired task was presumably increasing as the weeks went on.), how much behavior modification we were doing before this intervention began, perhaps just not so formally named, since the program is designed to improve different behaviors in the child; looking, listening, and speaking. (The speed with which they can master these is contingent on their own performance behavior, or self-discipline.)

The method of recording the behavior and obtaining reliability proved very successful.

The modification procedure was perhaps not one I would have chosen but this is irrelevant for the mother was the one who had to deal with the behavior and she evidently was most comfortable doing so this way.

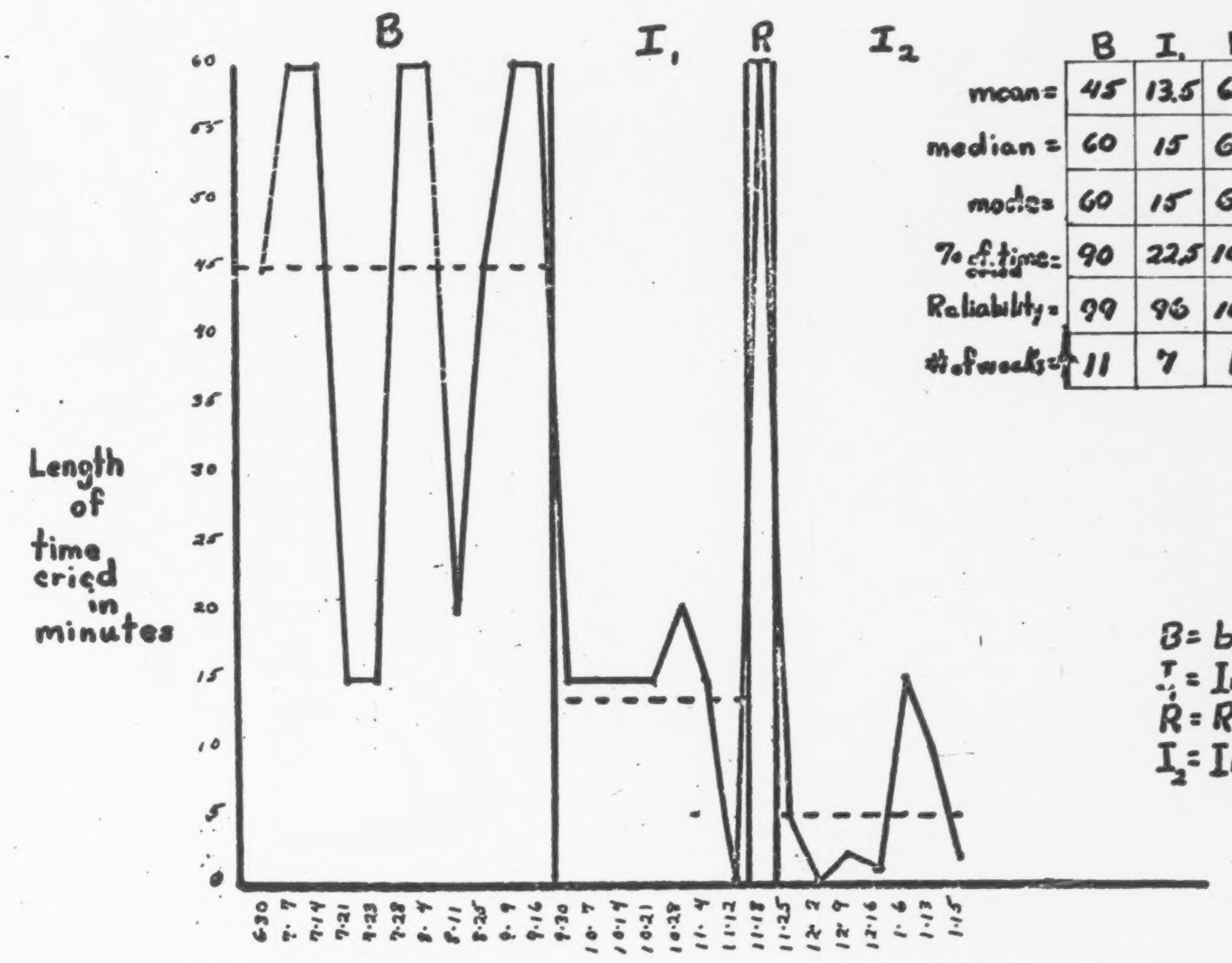
The results were good although not perfect. The interesting thing was how the grandmother's presence frustrated the mother so, that it motivated her to be more persistent than ever, which produced excellent results.

Another interesting fact was how reinforcing Aimee was to her mother, negatively and positively. When Aimee responded negatively to the task and consequence, the mother felt discouraged and unmotivated. As Aimee improved so did the mother. She became very insightful into Aimee's needs and responses, which is crucial for an ideal learning situation.

We can conclude therefore, that the study was successful on two counts: the child's ability to perceive a desired behavior and perform it, and the mother's ability to perceive non-acceptable behaviors and have in her the tools by which to manipulate them to be acceptable behaviors.

Shaping was used in the sense that as time went on more and more acceptable behavior was required in order to obtain approval and not warrant the consequence.

These methods may be generalized to many other children the procedures and consequences varying with the child and his behaviors.



	B	I_1	R	I_2
mean=	45	13.5	60	5
median =	60	15	60	1
mode=	60	15	60	2
% of time cried=	90	22.5	100	9.9
Reliability=	99	96	100	93
# of weeks=	11	7	1	7

B= baseline
I_1= Intervention,
R= Reversal
I_2= Intervention₂

PROCEDURE A PARENT MIGHT USE WITH AN EXCEPTIONAL CHILD

Lynne Irene Angel
May 18, 1970

"A Procedure A Parent Might Use With an Exceptional Child"

Handicap: Deafness

Age Child: 2 years 2 months

Undesirable Behavior: Child grunting, crying, tapping, hitting, or stamping feet on floor to get attention.

Goal Behavior: The child's own vocal approximation of "mama" to get mother's attention. (This is within the child's babbling behavior at present, without meaning.)

Parent-Child Education: 8 months in Parent-Home Center.

Child Education: None formally, 8 months from parents through Parent-home Center.

Description of Child: A is the first child of Mr. and Mrs. C. She is profoundly deaf, average I.Q., poor equilibrium, and extremely stubborn. She is a very attractive, chubby little girl. It took 7½ months for her to overcome fear of the clinician. She is rarely around other children. The etiology is unknown but familial deafness has recently been noted.

Description of Parents: Mr. C. is 26 years old, an auto mechanic working in a filling station owned by him and his brother. He completed 12 years of school. He is tall, fairly good looking, with full beard. He works 36 hours straight, then sleeps for 12, by choice, rarely seeing A. or Mrs. C. He has never attended any of the weekly Parent-Home Center sessions. He has attended 2 out of 12 night P.T.A. meetings, both times attired in his filling station clothing and leaving very critical of the other parents.

Father:

Mother: Mrs. C. is 23 years old and a housewife. She is attractive, very pleasant, cooperative, and anxious to learn how to help A. She completed 14 years of school. She has attended 43 weekly Parent-Home Center sessions thus far, all 12 P.T.A. meetings, other functions the parents have created, and 2 demonstrations by my request.

PROCEDURE:

Baseline For the first 7 days the mother will take baseline data on the number of times A. exhibits the undesirable behavior. This recording should be ongoing each time A. approaches mother for something and exhibits said behavior. It should be recorded on the attached form. There will be one form for each day where the mother will note the approximate time of day, what the child wanted, what she did, and the total number of times at the end of each day, under negative total.

Intervention:

Beginning day 8, each time A. exhibits this behavior the mother will say a firm "no", then take A.'s hand and using taction on mother's face will say "mama", returning child's hand to own face for her vocal approximation. After A. makes an attempt at this, mother will say "good," hug her and then follow through with A.'s request. She will do this on a consistent basis for one week, continuing the tactile clue and reinforcement, even when A. begins saying "mama". She will continue during Intervention to record, now also noting whether her spontaneous effort was negative (undesirable behavior) or positive (good behavior.)

Reversal:

On day 15 she will discontinue reinforcement and record for 3 days what A.'s behavior is.

Intervention 2:

On day 18 she will reinstitute reinforcement and record behavior.

Mrs. C. can be in telephone contact with me at any time. Plus I will see her 3 times, during the 20 day period at her regular weekly Parent-Home Center session.

BEHAVIORAL RECORDING SHEET

CHILD A. C.

BEHAVIOR: Getting Mother's attention by grunting, crying, hitting, tapping, or stamping feet on the floor.

DATE	OBSERVER	TIME OF DAY	WHAT CHILD WANTED	WHAT CHILD DID	FREQUENCY	NEG. TOTAL	POS. TOTAL
Monday	Mother				1		

INTERVIEWS WITH PARENTS

Dorothy Lane
Spring, 1969

Appreciation

I wish to thank Dr. Franklin Shontz for guidance and direction in the development of this project, Dr. June Miller for consultations and the generously open door to the program she provided, the staff of the Parent Home Center for their hospitality and helpfulness throughout - for assisting me in arranging appointments, allowing me to come into any part of their program in which I had an interest, and making me feel like a member of the program while there - those who assisted in rating the interviews, and lastly and most profoundly the parents who gave their time and themselves to the project, and by so doing afforded me a peak like experience -insightful, meaningful, inspirational.

I look forward to further discussion with the staff on June 2nd about the results of this project and to discussion with parents later, if this is still of interest.

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INTRODUCTION

Purpose - Goal

The purpose of this research project was threefold:

- learn more about what life is like for preschool children who have hearing impairments and for their families
- learn more about parental adjustments to the knowledge of their children's hearing limitations
- become acquainted with a relatively new concept and facility for the 'habilitation' of preschool age children with hearing impairments and their parents.

The goal of this project was the realization of these purposes, and the setting chosen for this investigation was the Parent Home Center of the Hearing and Speech Department, University of Kansas Medical Center, Kansas City, Kansas.

PROGRAM

The Parent Home Center is located one half block east of the Children's Rehabilitation Center, on the campus of the University of Kansas Medical Center, Kansas City, Kansas. A two-story duplex has been converted for this program's use. The upstairs of the building houses staff office space. Downstairs facilities include a reception-waiting room, a living room, kitchen, bedroom, bath, and an all-purpose room at various times used for staff meetings, group work with children and parents. An attempt has been made by staff to keep the house as simple in furnishings as possible, with an eye also to attractiveness, in order to create a home-like atmosphere not too different from homes of the children and parents who use the facility.

The Parent Home Center is a part of the Hearing and Speech Department of the University of Kansas Medical Center, and is a home demonstration program initiated through a grant from the United States Office of Education in April, 1967.

Miller (1968) describes the purpose of the program as follows:

> 1) to help parents develop at a very early time in the life of their child procedures and techniques for working with their child;
> 2) to initiate the communicative process;
> 3) to have a better educational evaluation;
> 4) to have a better audiological evaluation; and,
> 5) to develop a better understanding and attitude between the parent and child. (p.33)

The program is staffed by one full time and three part time teachers of the deaf, a part time audiologist, a part time psychologist, and a receptionist. Dr. June Miller, Chairman of the Hearing and Speech Department, University of Kansas Medical Center, is project director.

Children and parents are referred to the Hearing and Speech Department from Pediatric, E.N.T. and Birth-Defects Clinics within the Hospital, as well as from private physicians who know of the project. Admittance into the Parent-Home Center program is then recommended when this is appropriate.

On the first visit to the Center a video tape is made of the parent and child, and of the teacher and child. This provides a baseline against which to evaluate the child and parents' progress later. The focus of the video taping is on how well the child attends to speech, his parents and the teachers; the methods parents use in communicating with their child; and to what things (auditory and visual) the child gives his attention.

On the twelfth visit a second video tape is made as an evaluation of change in performance during twelve weeks of parent and child participation in the program.

The curriculum of procedures followed in the program includes auditory training, visual training, and vocal response stimulation. Parent and teacher together work out the content of the curriculum, and the teacher assumes responsibility of coaching the parent in teaching his child. The philosophy of this procedure is that the teacher can be of assistance to parents by reinforcing parent's behavior that is most helpful to the child.

Appointments for most families are scheduled once a week. In addition, for some children this semester, two small groups of children (four in each group) came for a group learning experience, and parents participated in small group discussion sessions with one of the teachers at that same time. The parents' group meeting was non-directive in character and offered a chance for mothers and one father, to air concerns, and other matters of mutual interest.

For all parents, a once a month parent meeting is conducted, planned by the teachers around topics of general interest and need.

My participation in the program included: observation and participation in a monthly parent group meeting, and in four sessions of a small parent discussion group; observation of an individual parent-child-teacher session; observation of four children in a small group session; one viewing and discussion with staff of video tape ratings; participation in several staff meetings, and interviews with nine parents.

These experiences did fulfill my goals for the project: furthering my awareness of what life is like for some preschool age children with hearing impairments and for their families; becoming acquainted with a new concept and program of 'habilitation' for preschool age hearing impaired children; and, through the nine parent interviews, gaining information and insight into adjustments of parents to their children's hearing impairments. This last topic is the focus of my report.

PROBLEM

Dr. Franklin C. Shontz and Dr. Stephen L. Fink's theory of Reactions to Crisis (1964) provides the basic theoretical framework for this part of the research project. A chart of their scheme is included in the appendix, page i.

This theory of crisis reaction was presented by Dr. Shontz in lecture to a Speech and Hearing Workshop audience at the Kansas University Medical Center, May 14, 1964. Since then, some staff members have used it informally as a guide in forming an impression of where parents might be in reaction to the confirmation of their child's hearing impairment. They indicated it could be even more useful to them if a scale were available that could provide a measure of parents' level of adaptation to this circumstance in their lives. This research project represents an attempt to begin the development of such a measure.

Dr. Shontz suggested consideration of some kind of a projective technique, such as sentence completion or projective stories for this purpose. The former suggestion was adopted.

A sentence completion form was developed, following the Shontz-Fink theory, and used in interview with nine parents involved in the Parent Home Center program.

REVIEW OF LITERATURE

Reaction to Crisis

The Shontz-Fink Crisis Reaction theory is broad in its applicability to any crisis event. In regard to hearing impariment in young children, it is to be expected that knowledge of that disability in their children is likely to present such a crisis situation to parents, and that the parent may experience some or all of the phenomena described by Dr. Shontz.

By any definition, he points out, crises necessitate a sudden restructuring of the psychological organization. Shontz and Fink theorize that the process follows in these stages: shock, realization, defensive retreat, acknowledgement, and adaptation. The final stage, adaptation, requires a change. It is not merely a going back to some previous state. Rather, it demands a shift, a reorganization and restructuring, and a new way of approaching all aspects of living.

They conceptualize and separate, aspects of living into these areas: self-experience; perception of reality; the kind of emotional experience the person has; his cognitive structure and his physical status. They add an area called social organization, to point to the parallel faced by society in times of social crisis. For the purposes of this paper, this last aspect will not be given further attention, as such.

A brief summarization of each phase follows.

Shock represents the initial encounter with the critical situation. Predominant at this point in time is an experience of numbness, as if there were no feeling, no self. The person is acutely aware of what he has facing him. He sees it very clearly and very sharply. Emotional reactions are void, or sometimes may be expressed as pleasant. No need is yet realized to plan for the future. Physically, a person may be able to do a great many complicated things, and yet not feel responsible for them. This is referred to as "depersonalization." He may not see the total social situation because his focus is on his own concerns.

Realization of helplessness, stress and threat follow the period of shock. The self-structure is threatened, and a person begins to worry. His perception of reality becomes less well organized. Panic and high anxiety result in an inability to plan, and an inability to understand the situation. A kind of depersonalized, objective assessing and diagnosing the amount of damage may take place.

Defensive retreat is an attempt to return to "what was" before the critical event took place. Denial may be used in this attempt to restore the old. Refusing to admit there has been a change means there is no need to adapt. Repression, suppression, or wishful thinking might be used in an attempt to avoid the problem. As denial takes place and provides psychic relief from the pressures of panic, a sense of relief may be experienced until reality has to be faced again, then anger may be the reaction. Denial brings rigidity and unwillingness to think about change.

Acknowledgment includes an encounter with reality and an awareness that it must be acknowledged and accepted. As this happens, there is again renewed stress experienced as recognition takes place that escape is not possible. Giving up one's old self and mourning the loss is an important part of this phase of adjustment (and one often overlooked by those working with people who have disabilities). Whereas denial takes place all at once, breakdown of this defense has to take place step by step. Thus a breakdown of rigidity may occur slowly.

Finally, adaptation or adjustment, with its implication of change, may occur. A sense of renewal may accompany this experience, bring with it a wider perspective of reality than the person had before the change. A gradual lowering of anxiety occurs and concommitantly increasing feelings of satisfaction. The person thinks about things differently, and is ready to make use of new ways and new ideas for doing things. Some re-evaluation and acknowledgment of inadequacies of the old may accompany this new growth and effort toward re-direction.

"Gradual" is the word Dr. Shontz suggests be used in regard to the time involved in an individual's moving from shock through realization, defensive retreat and acknowledgment to adaptation.

Sentence Completion Method

Sentence completion is a projective technique fairly widely used in clinical work and somewhat less used for research purposes, according to Goldberg's survey (1968). He found this projective technique most used and useful to clinicians in the evaluation of interpersonal attitudes, and in the assessment of adjustment and of anxiety. The major criticism of the technique, according to his survey respondents, is the generally broad, noncommital nature of responses often given to a sentence completion task. A major support for the method, offered by the respondents, is its usefulness in sensitizing the clinician to fruitful areas of discussion in the interview. Flexibility was also cited as a major advantage and probably this is the most characteristic property of the sentence completion method.

Neuringer and Orwick (1968) cite Sundberg's report that the sentence completion test ranked twelfth among all psychological tests used in a sample of clinical facilities in the United States. They point to this test's positive qualities, economy of effort of administration and interpretation, and to the negative, variability of the interpretation due to lack of precise validation data.

In their research Neuringer and Orwick attempted to validate two anxiety measures, the Renner, Maher and Campbell and the Borgotta and Meyer scoring systems. They found both techniques were more effective in identifying individuals who were characterized as being highly anxious and less useful in discriminating among other levels of anxiety. This research may be of further value in future refinement of the sentence completion inventory used in the present project.

One additional interesting point made by these authors, is that the sentence completion technique taps the more superficial, public levels of personality and so, can easily lead to censoring of responses by the respondent.

Rohde (1957) implies the positive value of the sentence completion method as being implicit in its nature. She states "The differential characteristic of the sentence completion method and other devices of its type for exploring personality is their employment of an indirect approach, as compared with the direct approach ordinarily used in questionnaire procedures. In the sentence completion method, the subject is presented with beginnings of sentences which he is requested to complete in any way he wishes, the assumption being that he will reveal more readily his thoughts, fantasies, and emotional conflicts than he would in direct questioning." (p.3)

According to this author, two important characteristics of the sentence completion instrument are: well-selected stimuli items, not too highly structured; and instructions that don't interfere with the subject's spontaneity of thought processes. Highly structured stimuli, she points out, are likely to produce more rather than less distortion, evasion and omission of the subject's expression of thoughts and feelings.

She quotes Holsopple and Miale's criteria for selection of test stimuli (Sentence Completion. C.C. Thomas Pub., Springfield, Ill. 1954), "In summary, the openings which deserve a place in sentence completion are those which threaten least and expose least obviously; permit variety of expression and flexibility of interpretation; lie within the experience and understanding of the subject; are relatively unstructured; invite completions which can be interpreted similarly by different clinicians; and invite completions from which inferences can be checked against external fact." (p. 34)

In regard to administration, she emphasizes that there is no special virtue to eliciting rapid responses. In fact, spontaneous responses may bring forth unconscious defense mechanisms more quickly than do responses that come after the subject has had some time for deliberation, and thus, may be more difficult to analyze.

Interpretation and analysis of sentence completion material, generally, tends to be subjective, and formal methods of establishing reliability and validity of test data are found wanting, as has been discussed. Rohde suggests that some authors believe this is at the same time a liability and an asset to the method, and that there is no real solution to the problem. In fact, it has been suggested that the examiner himself is an integral part of the instrument, and that validity and reliability have no meaning unless this quality, the examiner component, is known. One way of handling the problem of analysis is to secure the judgements of other persons, and check them one against the other.

Rohde discusses the historical background of the development of the sentence completion method and a review of research on this non-directive, projective technique that is helpful in putting the present project into perspective. However, since an extensive review of the subject is not the intent of this paper, presentation of this material will be omitted. In the Procedure section of this paper Rohde's comparison of stimulus items from various versions of sentence completion material is cited as having been used. The reader's acquaintance with these other versions is presumed. For one who may not have this background of information, Rohde's historical review (Chapter I) will be helpful.

Parents

A brief review of certain references on Parents is included in order to provide background against which to view the population of nine parents from the Parent Home Center who participated in the sentence completion interviews of the present investigation.

Adams (1962), writing as the father of two hearing impaired daughters, identifies five dimensions to the problem of hearing loss in children: the parent; the child; the parent-child relationship; the professional and educational setting; the hearing world. From a parent's point of view, he says the help he would like from professional persons includes psychological counselling for both child and parent by a psychologist or counselor thoroughly familiar with the psychodynamics, educational and social problems of hearing impaired children. He says that at times the parent is as much the patient as the child. Parents of hearing impaired children may find themselves even more pressed for time and pressed into even more diverse roles than parents ordinarily face, he thinks. For instance, " They may (need to) become local politicians, educators of the educator, program makers and bus drivers, plus a dozen other things in order to acquire for their hard-of-hearing child a reasonably good education." (p. 548)

Hedgecock (1955), addressing parents, says," I think it is the rule, rather than the exception, for observant parents to be relatively sure in their own minds whether or not their child hears before the physician ever gives an opinion ... (but that) in the face of behavior that is different from normal, intelligent parents cannot accept the very assurance they are looking for... (and) the quest goes on until someone examines and studies the child carefully enough to convince the parents that an accurate diagnosis has been made." (p. 435)

His observation of parents' reactions to confirmation of their children's deafness is that while grief and bewilderment may follow, he finds that for many parents it is a turning point between confusion and resolute action (between acknowledgment and adaptation in Shontz and Fink's theory). Hedgecock thinks the most devastating period, emotionally, for parents is the one of uncertainty, when the need to do something is felt strongly, but not knowing what to do and being afraid of doing something wrong, leaves them in a turmoil.

He advises parents that their most important responsibility to their deaf child is to instill in him confidence that he is accepted and loved as he is. He cautions that they not become over-jealous in their role of teacher to their child, to the neglect of their responsibilities as parent.

Fuller (1962) also emphasizes parents' responsibilities in the emotional adjustment of their children to hearing impairment, quoting Nina Ridenour, (Building Self-Confidence in Children. Scien. Res. Ass., Chicago, 54, p. 37) "The single most important factor in determining the child's attitudes toward his handicap is the attitude of his parents. In other words, the extent to which any handicap handicaps depends to an important degree on the way the child and his family feel about it." (p. 320)

He discusses attitudes of acceptance and objectivity that he thinks are helpful for parents to have in assisting their children to develop realistic emotional adjustments to deafness. In this regard he raises some interesting, perhaps provocative points. He states that he thinks one attitude that interferes with the acceptance of the deaf child is the denial that deafness is a handicap. Though it is clearly not the same handicap for all children, he points out, it does most often alter life for a child, the effects tending to be restrictive, and that accepting the restrictions it imposes is necessary to accepting deafness. Other aspects of parental attitudes of acceptance include: not blaming themselves for their child's hearing problem, and not viewing the hearing impairment as a punishment.

To develop an attitude of objectivity, he thinks it helpful for parents to observe the following. (Again, there is room for discussing these points). Define goals in terms of their child's abilities and interests, recognizing the possible limitations of educational achievement imposed by the language deficiencies resulting from deafness. Avoid over-emphasizing the importance of speech for, as he says, "the quality and intelligibility of a deaf person's speech is largely irrelevant to his development of social competence and emotional stability...The mere fact that hearing people can talk does not seem to save them from social inadequacy or from emotional confusions." (p.323-4) A third point in developing an objective attitude is to avoid categorizing a child according to some concept of a 'hearing impaired personality', but, rather, see him for the individual he is.

Two attitudes he thinks are helpful for children hearing impairments to have are: attitudes of independence and confidence. In this regard he brings up the question of whether mothers can be mothers and teachers as well. "Mother ideally is a source of boundless love, unfailing sympathy, never-ending support and encouragement. Teacher, on the other hand, must disapprove, must press for improvement, must be more or less objective and impersonal in evaluating progress, and may even have to flunk her pupils. The shift from the role of mother to the role of teacher and back again is difficult for some mothers and occasionally impossible...(though) the great majority of the mothers I have known alternate between mother and teacher with some degree of success." (p. 327) He brings this up, he says, not to discourage mothers from trying to teach their children basic communication skills, but only that they be aware of the dual role they are playing, and of their first responsibility as mother.

Streng et al (1955) also cautions parents to be aware of their duo-role in being parent and teacher as well. Their caution is more to the point of not pushing too much, too fast in their zeal to take every opportunity for language stimulation, not letting a minute of the child's important early years be wasted. They point to greater success in learning coming when parents guide and teach as a matter of course in the total context of their contacts with their child during the day rather than by the clock.

Wright (1960) cites numerous research findings concerning parental attitudes and parent-child relationships. She discusses the problem of dependence-independence, overprotection-overexpectation that many parents of children with disabilities have in nurturing their child to self-responsibility. Cultural expectations play a part in parental attitudes in this regard, in our culture independence is highly valued and dependence disvalued. This cultural value may complicate parents decisions about appropriate amounts of dependence-independence to nurture in those of their children who have some kind of disability that may realistically bring more and longer periods of dependency.

Parents are subject to not only their own attitudes and those of society in general, in this regard, but also to those of other family members and neighbors, who may criticize them for overprotecting on the one hand, or overexpecting on the other hand.

Quoting from a study by Langdon and Stout (These Well-Adjusted Children . New York: John Day, 1951.) she presents what can be a guide to parents in this regard:..."loving them and letting them know it, thinking of them as people and treating them so, appreciating what they do and trusting them and telling them so, and above all letting them know they are wanted." (p. 54-5)

Another problem faced by parents when a child of theirs has a disability is that of hope versus stark reality. Wright proposes two guiding principlse: first, the realistic state of affairs relating to the current welfare and planning for their child must be faced and discussed; and second, the emphasis given to the reality of the future can be guided by indications the parent gives of his readiness and need to know it.

Avery (1958) places some emphasis on parent involvement, along with early detection, early and effective use of amplification, early education, and community acceptance, as having had an important place in rendering the hearing impaired child less "handicapped" by his particular difference.

Myklebust (1954) identifies three steps in making a differential diagnosis of auditory disorders in young children: history taking; clinical observation; and clinical examination. REliance upon parents for information at the first step is essential, and skill on the part of the interviewer is important in order that the parent is able to provide the most helpful information. Sensing parents' feelings, wishes, and fears is helpful in interpreting information parents contribute in their initial interview in a diagnostic evaluation of their child.

Myerson (1955) disucsses the importance of parental attitudes and responsibilities in setting appropriate standards of expectation for their children with hearing impairments. From parents, young children derive the foundation of their standards, values and self-image. He discusses how normal it is for parents who have not lost their hearing to want to build the child in their own image - "I want my child to learn to speak and to become as normal as possible." When parents can see hearing as one tool, value, characteristic, and see that the child has many in addition to this one, they may see the loss of that tool in better perspective, and thus help their child to so view it, he proposes.

Janis' disuccion of the place of preparation and rehearsal of coping behavior prior to a stressful experience has implication I believe, for parents' reaction to the knowledge of hearing impairment in their children. He states, "The assumption is that a person's capacity to assimilate a stressful event without developing residual emotional disturbances depends upon the degree to which he has mentally rehearsed the danger situation in advance and has worked out reassuring concepts which can function effectively to counteract feelings of helplessness. According to this assumption, any given set of frightening events...will be likely to give rise to emotional disturbances if the person has not gone through the process of preparing himself beforehand with effective reassurances with which to control his fear at times when perceptible danger is at hand. The exigence of stress impact may be momentarily frightening, but if the person is psychologically prepared, he is less inclined to develop a residual hypersensitivity to the cues present in the danger situation. Moreover, he is less likely to interpret the behavior of danger-control authorities as punitive, negligent, or sadistic if he has correctly anticipated beforehand the occurrence of pain, discomfort, and the authorities demands for passive submission to body manipulation." (p. 348-9)

The implication I find in this is at least one variable in parent's reaction to knowledge of their child's hearing loss might be the amount of time they have had to psychologically prepare for this knowledge. Though his discussion is based on how people face anticipatory fear in reaction to one particular type of stress situation, I wonder if one could anticipate that, among other variables, the mother who has rubella and is told of the possible consequences to her unborn child-hearing loss, mental retardation or other birth defects may have the opportunity to prepare for the later confirmation of her child's hearing loss? And may she, in fact, experience some relief that it is less a disability than others she might have imagined?

PROCEDURES

Instrument

As stated in the introduction, the purpose of the sentence completion interview was to learn more about what life is like for some preschool age children who have hearing impairments and for their families, and to understand better the process of parents' adjustment to confirmation of their children's hearing impairment, according to the Shontz-Fink theory of Reactions to Crisis.

Therefore, in the construction of the sentence completion form sentence stems were selected that would, hopefully, elicit responses indicative of the stages of reaction to crisis identified in this theory.

Items were chosen by the following procedure:

- Study and analysis of the Shontz-Fink scheme stimulated development of the basic stem items.
- Dr. Shontz reviewed the preliminary list of stems, and made suggestions for further development of items.
- Items thus far under consideration for inclusion were studied in comparison to Shontz's Highland View Hospital Sentence Completion Form, and revisions, additions and deletions were made.
- Comparison of these stimulus items was then made with those presented in Rohde (1957) as a comparison to her form (p. 53-59), and further modification was made, taking particular note to retain those items most used in other forms when they were of pertinence to the intent of this study. (See Appendix, p. ii for Work Copy I).
- The reaction of members of the Seminar in Somatopsychology was solicited, and revisions made in light of their reactions.
- Parent Home Center teachers were asked for their reactions and suggestions, and these were incorporated into the form.
- The list was then pared from approximately 95 possibilities to 60 items, keeping about 10 items in each of the six areas of the Shontz-Fink scheme, and giving priority primarily to those items most used in other sentence comple-

tion forms when they fit into my conception of the Shontz-Fink theory. (See Appendix, p. iii for Work Copy II).

- Slightly further revision was made in the first two interviews, then, because of the small sample anticipated, an attempt was made to present as many of the same items to interviewees as possible. The form is considered to be very open to further revision, however.

Rohde (1957) suggests that in the selection and arrangement of stimuli, items that are expected to elicit information relating to everyday life and of least emotional content be placed in the first part of the blank, and those more apt to involve emotional content be placed in the latter part This suggested arrangement was followed in developing the present sentence completion interview.

Population

Parent Home Center teachers suggested parents for participation in this research on the basis of expected cooperation and of time available to stay an hour longer or come an hour earlier than their regular appointment in order to see me and not interfere with their appointed time with teachers. One additional criteria was added to the selection procedure when I found it possible to be at the Center only on Tuesday mornings. Fortunately, most of those parents suggested were by then involved in a Tuesday morning small discussion group and could still be kept in the sample.

Because the focus of the study was exploration of the possibility of developing a way to measure the Shontz-Fink Crisis Reaction theory, teachers were asked to indicate their impression of each parent's acceptance or non-acceptance of his child's hearing loss. Of the group, four parents were identified as accepting, and five as non-accepting of the disability at this time.

Data Collection

In a very busy house, on probably its busiest day of the week, it was no surprise to find it a challenge sometimes to find a corner to use for the interview. Staff members were exceedingly helpful, parents extremely patient, cooperative and able to concentrate on what we were doing, and children likewise patient with the inconsistency this brought to their expected routine, and generally settled to play with whatever play materials were available (in one instance a mother's purse when the supply of toys we took with us was exhausted).

The interviews generally were conducted with the mother (or mother and father in two instances), the interviewer, and the parent's child or children if the extra time involved that day had necessitated bringing other children in the family with her, present. Though sometimes someone was working in an adjoining office, kitchen or other area close by. (And then there was the time that visitors came through the Center!)

The procedures followed in introducing and (otherwise than the above noted inconsistencies) conducting the interview were consistent. I introduced or re-introduced myself. I had met some parents at the beginning of the semester at a monthly parent group meeting. I mentioned my previous experience with Parent Institute since most of them have attended the Institute, and this common experience might assist in lessening the newness of the interview experience and be an aid in developing rapport. My interest in learning more about what life is like for children who have hearing impairments and for their parents was explained, and the sentence completion idea was introduced as a way of assisting me in this pursuit.

Interviews lasted from 45 to 60 minutes. If time became short and it was apparent we would be unable to complete all items, I used my judgement about which items to include, trying to take into consideration those items that might have been covered in previous answers, and what I considered after several interviews to be key items.

Analysis

Global ratings of each interview were made by five persons independent of knowledge of one another's ratings.

The rating instrument (See Appendix) used by the judges was constructed along lines of the Shontz-Fink scheme. It consists of four areas designated A,B,C,D, that parallel the first four Shontz-Fink "content areas": self-experience, reality perception, emotional experience, and cognitive structure; and two areas designated E,F, from the last two Shontz-Fink "content areas": physical parallels, social parallels, that were somewhat adapted to: physical aspects, and social aspects.

Included in each area are five statements representing Shontz-Fink's five phases of adaptation: 1) Shock; 2) Realization; 3) Defensive retreat; 4) Acknowledgment; and, 5) Adaptation. A sixth statement was added for use if it was not possible for the raters to use any one of the first five statements in rating the interview. The rater was instructed to use number 6) rarely, only as a last resort, and to include his reason for its use.

The order of presentation of interviews to each rater was varied, in an attempt to discount any bias that might occur as the rater became more proficient in use of the instrument.

Five professional people with some years experience in their work (with the exception of Rater No. V) participated as raters in this study. They were chosen to represent various professional fields, though all have had some background of education in and experience with psychological principles. Rater No. I is a psychologist at the Kansas University Medical Center. She is not working directly with the Parent Home Center. Rater No. II is a psychiatric nurse. Rater No. III is the director of a program of religion and psychiatry in a psychiatric clinic. Rater No. IV is a nursery school teacher whose professional preparation was in a child psychology program. Rater No. V is a young wife, as yet without children, who had the usual general psychology college coursework plus some work in anthropology. Rater No. III is a man, the other raters are women.

Raters were instructed to read each interview in its entirety, and then to complete the rating form, making and marking one rating in each of the six areas of the form.

Each rating form was then tabulated, and the total number of points given each interview was noted. Each rater's nine interview ratings were divided into two groups--those receiving a high number of points and those receiving a low number of points.

The judges ratings of high and low as measured by this rating instrument, hopefully reflecting the intent of the Shontz-Fink scheme of crisis adaptation, were then compared with the teacher's impressions of these parents as being high or low in acceptance of their children's hearing losses.

Results

Following are the results of each rater's evaluation of each interview. Based on the total number of points assigned the interview by the rater, interviewees are arranged into two groups: high (on the Shontz-Fink scheme) and low (on the Shontz-Fink scheme). The number of points assigned is noted beside the name of each interviewee.

Rater	High	Low
1 (MM)	Har 24	Con 17
	Mag 26	Her 16
	H 30	B 10
	K 28	McC 17
	Aly 27	
2 (HW)	K 30	McC 22
	B 30	Her 21
	Aly 30	Har 20
	Mag 28	
	H 27	
	Con 30	
3 (TC)	B 28	Her 18
	Har 27	Aly 19
	Mag 26	McC 7
	H 30	
	Con 29	
	K 24	
4 (CT)	Con 30	McC 14
	Mag 27	Aly 20
	H 26	Har 17
	B 30	Her 16
		K 14
5 (CH)	H 28	Her 13
	Aly 29	Con 16
	K 23	B 16
		McC 18
		Mag 18
		Har 18

The teachers' impressions of these interviewees as being accepting or non-accepting is as follows:

	Accepting	Non-accepting
Teachers	H	Har
	Mag	Con
	K	Aly
	B	Her
		McC

A comparison of the teachers' impressions of accepting parents and the raters' evaluations of those whom they scored high on the rating scale reveals in general, raters support of teachers impressions.

	Teachers	Raters
A. Parents:	H	1 - 2 - 3 - 4 - 5
	Mag	1 - 2 - 3 - 4
	K	1 - 2 - 3 -
	B	2 - 3 - 4

A comparison of the teachers' impressions of non-accepting parents and the raters' evaluations of those whom they scored low on the rating scale collaborate at the extreme end of the ratings, but less so away from the extreme.

	Teachers	Raters
N.A. Parents:	Her	1 - 2 - 3 - 4 - 5
	McC	1 - 2 - 3 - 4 - 5
	Har	2 4 - 5
	Con	1 5
	Aly	3 - 4

Combining the five raters' evaluations for each interviewee provides another way of looking at the data, and points to this same finding when compared with teachers' impressions.

Teachers' Accepting	Raters' (High Rating)		Teachers' Non-Accepting	Raters' (Low Rating)	
H	H	141	Har	Har	106
Mag	Mag	125	Con		
K	K	119	Aly		
B	B	114	Her	Her	84
	Aly	125	McC	McC	78
	Con	122			

In summary, raters' evaluations collaborated teachers' impressions at both extreme ends of the continuum. Both teachers and raters saw H, Mag, K, and B as accepting and adapting to their child's disability. Both teachers and raters saw Her, McC, and Har as non-accepting and at a lower stage of reaction to their child's disability.

The difference in how teachers and raters saw Con and Aly would be interesting to pursue. One possible influence in regard to Aly was that the teacher's impression was more influenced by the father's attitude than by the mother's, and it was the mother who participated in the interview, so this finding may not be as contrary to expectation as it appears to be.

Discussion

The close agreement between raters and teachers in the placement of seven of the nine interviewees in the same groupings - high (accepting) and low (non-accepting) tends to support the first attempts at development of a measure to evaluate the Shontz-Fink levels of reaction to crisis theory.

Albeit a gross measurement, it is a first step and generally positive nature of findings is encouraging to further refinement, and development of both the sentence completion interview form and the rating scale.

Further statistical treatment of the present data would be valuable in confirming (or disputing) the tentatively suggested results reported in this paper. An item analysis of sentence stems should next be made in order to further refine the Sentence Completion Interview form. Likewise, an analysis of rating scale statements is next in order in the refinement of that scale.

In relation to his theory, Dr. Shontz has described it as a kind of approach-avoidance theory. That is, movement from shock to adaptation is not conceived to occur as a smooth line in one direction. Rather it is theorized to occur in a hill and valley kind of way, with alternating periods of approach and avoidance, of movement toward and movement away, of acceptance and non-acceptance with the direction of movement continuously forward through these high and low periods, gradually, over time, renewed growth may be achieved. Perhaps the line of this movement follows or is analogous to Shontz's (1965) conception of the line of anxiety level through the five stages of reaction to crisis.

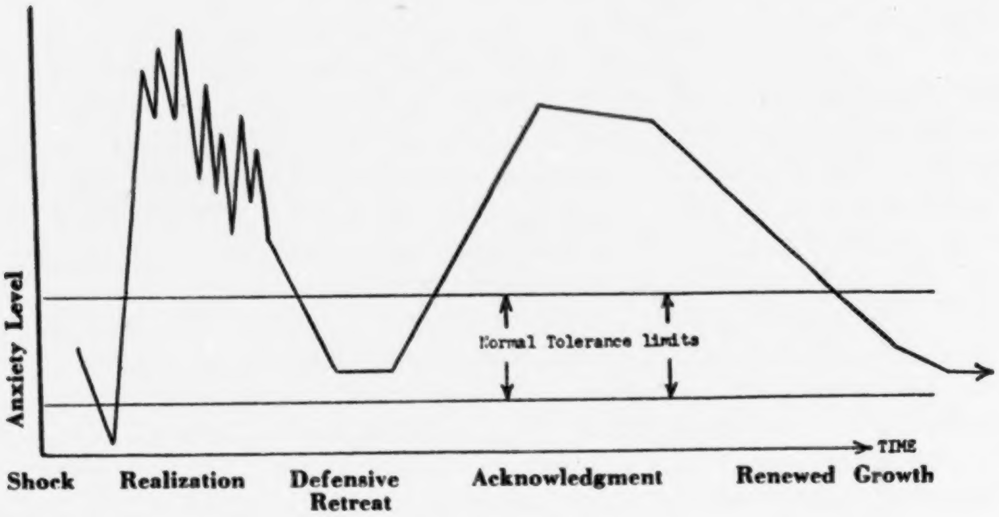
Following this theory, one might expect more hostility and bitterness, more extreme reactions, more ambivalence, more extremes of movement toward and away from in the early stages of reaction to crisis. Some of this kind of behavior is seen in the interview information of the Har parents, who in time are still fairly close to the confirmation of their daughter's hearing loss.

As movement progresses toward adaptation, one might expect less extremes in adjustment, fewer vacillations, acceptance with less anxiety. Some of these kinds of behaviors are seen in the interview material of Mrs. H.

In addition to an interest in examining parental reaction to confirmation of their child's hearing loss, some other interesting insights into life of children with hearing impairments and their parents were gained through the interviews. Some questions were raised that would be interesting to pursue in discussion with teachers and perhaps in further research in the area of parent-child relationships and interactions.

Very generally, at some point in most of the interviews a child's strong willedness was mentioned. It might be discussed as independence, temper, or some such, but it so very often came up as an aspect of these children's personalities that it raised a question in my mind about whether a child with a hearing loss may be more assertive of himself in attempt to control when he has less control of one facility, one tool, for coping with life? Or is the age of these children enough to explain the phenomena? This is a time of life, at three and four, when children normally begin to assert themselves. Is this enough to explain the predominance of this behavior in their children as reported by these parents?

Another very generally clear picture one has from talking with these parents is the greater amount of involvement the parent has with the child who has a hearing loss...More involvement in a teaching capacity; more involvement in time spent with the child; more involvement in community enterprises and efforts on behalf of their child or other children with disabilities. One wonders what effect this may have on other family relations? One mother talked briefly about one other child in the family having problems in relationship to the child who has the hearing impairment, and how this gets the whole family involved in disruption at times. Another talked of the other child in the family wanting to be with



(Figure 2)

(To briefly explain the figure: the horizontal axis of the graph represents time. There are not specific units, the phases are simply represented in their approximately correct temporal relationships to each other.)

them whenever they tried to have their teaching time with the child who has the hearing loss, and the planning this required in order that he not feel left out, but also that they might have the lesson time with the other child.

A third theme running through the interviews was a generally high concern for school placement in near and far future. And akin to this, in part, though also another theme in its own right, was that of the stress on normalcy that predominates most of the interview material. Both topics would be interesting to discuss further with staff and perhaps with parents themselves at a future time.

Conclusion

In conclusion, this was a tremendously meaningful experience for me. The goals of the project were more than fulfilled, from my standpoint. Observing and participating in the Parent Home Center did offer an opportunity to enlarge my awareness of what life is like for some preschool age children who have hearing disabilities and for their families. It did offer an opportunity to become acquainted with a new concept of and facility for 'habilitation' of young children with hearing impairments and their parents. Through the opportunity it afforded to interview nine parents at the Center it did deepen my awareness of parental adjustment to children's disabilities, and provided me with the opportunity to begin the development of an instrument to measure the Shontz-Fink Theory of Reaction to Crisis.

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TEACHING BEHAVIOR MODIFICATION TECHNIQUES TO PARENTS OF HEARING HANDICAPPED CHILDREN

by Lou Hoover*

Some hearing handicapped children are difficult to manage behaviorally. Parents of such a child may report that they feel uncomfortable disciplining their child because they can't explain the reason to him, or that they find the hearing handicapped child more difficult to manage than their normal hearing children because they cannot use verbal cues with him. A child whose hearing loss was not discovered until the age of three, four or five may present particularly severe behavioral problems. Often parents of such a child have been trying in vain to teach the child the meaning of "no-no," while the child's behavior has developed into a major problem for everyone in the family. These parents need help in managing the behavior of the child so that he is a pleasure, rather than a burden to live with.

Difficult to manage children are also educationally handicapped. With increasing emphasis on early education of the hearing impaired, children who are three and four, or younger are being taught sound discrimination, speech reading, speech, and language acquisition. In order to profit from an educational program, a child must be able to attend to his teacher and follow directions, and to inhibit interfering behaviors such as running and shouting.

This paper summarizes the results of a program, a part of the Parent Home Project, in which behaviors of preschool age, hearing impaired children were modified. The behavior modification projects were carried out by a parent of each child, under the advisement of the child's teacher, a psychology trainee, or a staff psychologist.

The children were all under the age of five. They were all students in the preschool or the Parent Home Center, both preschool programs for the hearing handicapped offered by the L.B. Spake Department of Hearing and Speech.

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The purpose of the Parent Home Center (PHC) is to increase the amount of sound discrimination, speechreading, speech, and language learning experience of the young hearing handicapped child, by teaching his parents how to exploit the potential of their everyday environment for such experience. PHC is furnished like an ordinary house. Infant to preschool age hearing handicapped children, accompanied by their mother and/or father, are seen in individual sessions with a teacher of the deaf, usually for one hour per week. The parents are taught to use techniques for the training of sound discrimination, speech, speechreading and language development while they go about everyday tasks, such as cleaning the house, feeding and dressing the child, etc.

In the preschool, hearing impaired children are taught speech, speechreading, use of audition, and language skills. The children are in class for about three hours daily, four or five days of the week. Mothers of the children often observe their children being taught, are seen regularly by the teachers involved, and are sometimes involved in classroom activities.

Many of the children who are seen in the preschool have formerly been seen for a year at the Parent Home Center. Heavy emphasis is placed in all phases on teaching parents how to work with their children and parent education is continued, or if necessary begun, when the child is in preschool.

The aim of the program described in this paper was to provide parent education in behavior management for those parents who needed it. It was felt that such a program would be a valuable supplement to the existing program.

The program was carried out within the format developed in Behavior Modification Clinic, a program operated by the Children's Rehabilitation Unit Psychology Department of the medical center. In Behavior Modification Clinic (BMC), parents who are having behavioral problems with their children are taught behavior modification techniques (Mira, 1970). Behavior modification is a method of influencing behavior patterns by systematically controlling the consequences (rewards or punishment) contingent on specific behaviors (Patterson & Gullion, 1968). Behavior modification seems a particularly appropriate management technique for hearing handicapped children because it emphasizes behavioral, rather than verbal, communication.

The behavior modification program was carried out in part by the Hearing and Speech Psychology Trainee, a graduate student hired to perform psychological services for the Parent Home Project. As part of a cooperative arrangement with the Psychology Department, the trainee was supervised and assisted by a psychologist experienced in working with sensory handicapped children, and in teaching behavior modification to parents in Behavior Modification Clinic.

In addition to teaching behavior modification to parents, the program sought to give the Parent Home Center and preschool teachers supervised experience in teaching behavior modification to parents. For purposes of clarity, the teaching of behavior modification techniques (to parents) is labeled advisement, while supervision of a parent advisor is labeled training.

Parents were referred for advisement by their child's teacher if the child's behavior was interfering with his educational progress, or if the parent asked to be referred. If the teacher who made the referral was interested in learning to do behavior modification advisement, she then became the advisor for the parent she had referred, and the Hearing and Speech Psychology Trainee functioned as her trainer.

THE BEHAVIOR MODIFICATION PROJECTS

Behavior modification projects formed the nucleus of the program. To carry out a project, a parent selected and pinpointed a behavior to be changed, recorded the rate at which it was occurring, and applied consequences intended to increase or decrease that rate.

To select a behavior to be changed (target behavior) the parent was asked to describe the particular behavior in his child which he felt most urgently needed to be changed. He was then taught how to "pinpoint" the behavior. To pinpoint, first the parent must pick a behavior rather than a "nonbehavior." For example, if the parental complaint is "doesn't do what he is told," the parent will need to select "does do what he is told" as his target behavior and try to accelerate it. Second, the parent must describe a specific behavior to change. For example, "misbehavior" would be a poorly pinpointed category of behavior. A parent trying to count this behavior would probably have difficulty telling when one misbehavior ended and another began. The parent would have to pick a more clearly defined behavior, such as "hit little brother," or "throw object."

Of the parents in our program many selected behaviors which were troublesome, annoying or embarrassing to family members, e.g. throwing food on the floor, temper tantrums, etc. The target behaviors selected also include behaviors related to the child's hearing loss, e.g. taking off the hearing aid or looking at a speaker's lips.

The parent was asked to make a record of his child's behavior at home. He was to observe the child regularly for a certain period of time every day. Each time the target behavior occurred the parent recorded it. The rate at which the behavior was occurring could then be calculated each day by dividing the number of occurrences by the total time the child was observed. Parents were to record behavior for at least ten days in order to get an adequate baseline before they began applying a consequence.

After he had gathered sufficient baseline data, the parent was helped to select an appropriate consequence which he felt would be effective with his child. He was to use the consequence he had selected immediately after each occurrence of the behavior to be changed. At the same time he was to continue recording his child's behavior. Thus the effect of the consequence could be assessed, by comparing the rate of behavior while the consequence was in effect to the rate before the consequence was used (the baseline data).

If the desired change in behavior occurred, the Lindsley Mid-Median Test (Koenig, 1967) was applied to determine the probability that the change in rate could have been a chance occurrence (due to the variability in rate of the behavior), rather than an effect of the consequence.

Figures 1 and 2 show the data from two projects which were done by mothers as part of the program. The behavioral rates are plotted on graph paper, so that the effect the consequence is (or isn't) having is readily visible. The graph paper shown is a type especially designed for plotting behavior rates*, and it was used by all the parents participating in the program. It is a log cycle paper. This means that, rather than the integers (for example 1, 2, 3) being equidistant as they are on standard graph paper, powers of 10 (for example 10^0 (=1), 10^1 (=10), 10^2 (=100)) are equidistant. Log cycle paper has been found to be superior to standard graph paper for portraying behavioral rates for a variety of reasons which need not be discussed here.

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*Behavior Research Company, Box 3351, Kansas City, Kansas 66103

In Figure 1 are the results of a project in which Mrs. R. accelerated her son E.'s "looks" for full sentences. Mrs. R. recorded E.'s "looks" one hour per day for three weeks. Then Mrs. R. began using a consequence -- she gave her son a tally mark every time he looked at her for a complete sentence. The tallies could later be cashed in for small inexpensive toys or candy.

There was an immediate increase in the behavior rate, with a gradual increase over the next two weeks. Mrs. R. then began using her consequence all day long with E. and the behavioral rate climbed even higher.

One-and-one-half weeks after the project was completed, E. was still "looking" at a high rate in response to his mother saying "Watch my lips," even though he was no longer receiving candy or toys for the behavior. In any behavior modification project, hopefully natural environmental reinforcers, e.g. parental pleasure, will begin to have an effect so that the new behavioral rate will be maintained after the original consequence is withdrawn. We assume something of the sort occurred in this case.

Figure 2 demonstrates the process of finding an effective consequence for an individual child by looking at the child's behavior. P.V., a four-year-old girl, was wearing her hearing aid very little because she was repeatedly taking it out of her ear, and Mr. and Mrs. V. were afraid it would get lost or damaged. They pinpointed the behavior of taking the earmold out of the ear and attempted to decelerate it. It is apparent from their record of P's behavior that the first consequence they attempted to use, holding her in a chair, had an opposite effect from the desired one. Mr. and Mrs. V. quickly discontinued using this consequence (and also discontinued the project). When they resumed the project with another consequence, putting her in a corner, it had only a slight decelerating effect, therefore Mr. and Mrs. V. switched to a third consequence -- hit hand with spoon -- which quickly decelerated the behavior to a low rate and eventually decelerated it to zero.

PARENT ADVISEMENT

Parents were advised by their child's teacher, by the psychology trainee, or by the supervisory psychologist. Parents were typically seen in advisory sessions once each week. Length and frequency of the sessions varied, depending on individual needs.

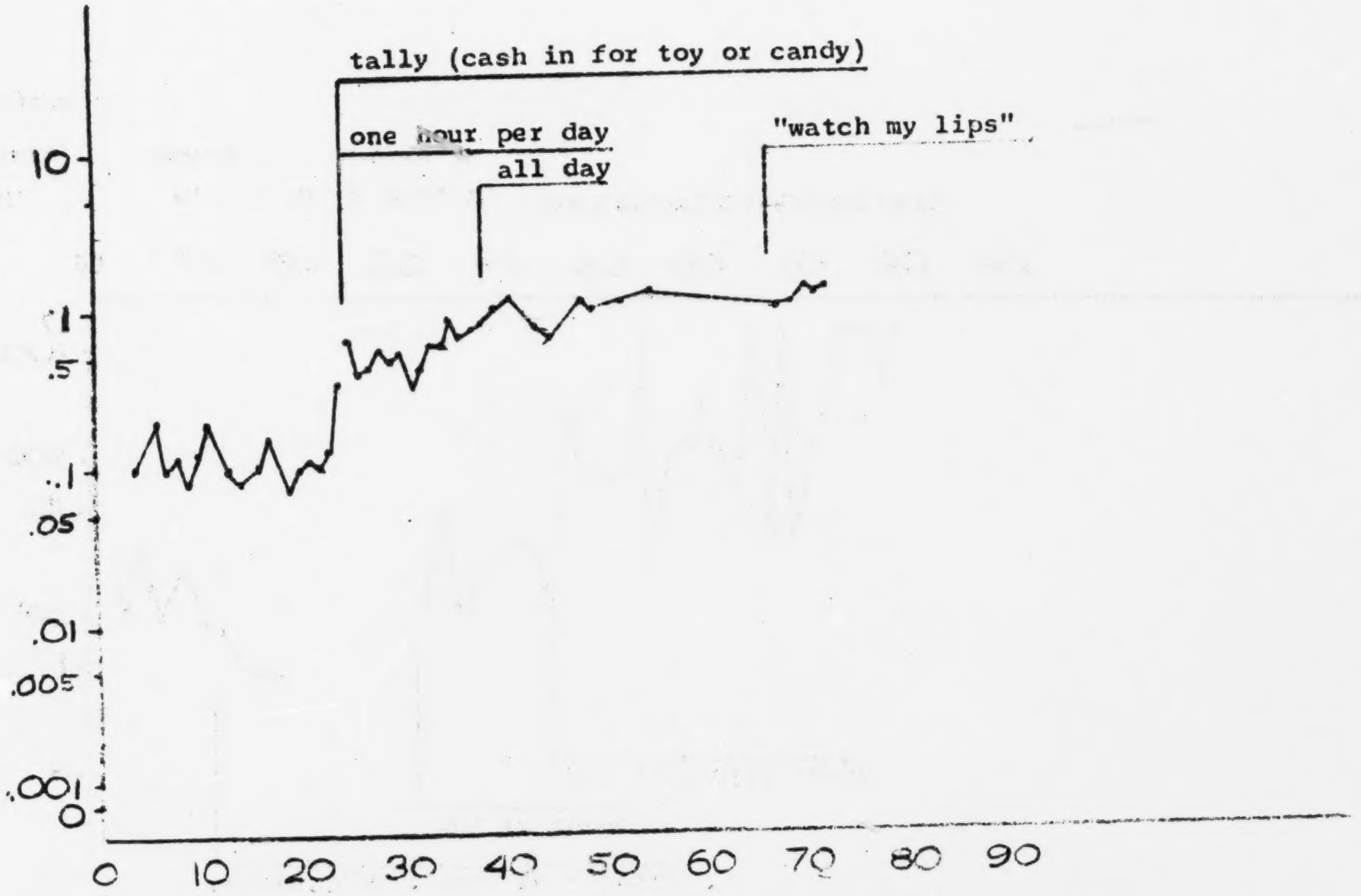
In the advisory sessions, they received general information about behavior modification, planned their own projects, and discussed their results with the advisor. The intention was to teach them the general method of behavior modification and to use the behavior modification projects as a practice laboratory for them. Parents were required to bring records of each current project to the advisory session so their progress and problems could be discussed from week to week.

Most parents had little difficulty learning to pinpoint behavior. This is reflected in the fact that only one of this group of projects had to be abandoned because the target behavior was not specific enough.

Parents also had little difficulty in predicting what consequences would be effective for their children. This is reflected in the fact that in all but one of the projects that were carried to success, the first consequence selected was successful.

Considerable difficulty was encountered in getting parents to count behavior, record it and graph it. We found that this was not a failure of parent interest or understanding, but of parent behavior. Parents, even those who expressed considerable enthusiasm about learning behavior modification, often missed a day or two or three of recording, or came to the session without having graphed their rates, or "forgot" to appear for an occasional advisory session. In such cases, consequences were applied to the parent's behavior. An example is the case of Mrs. J.

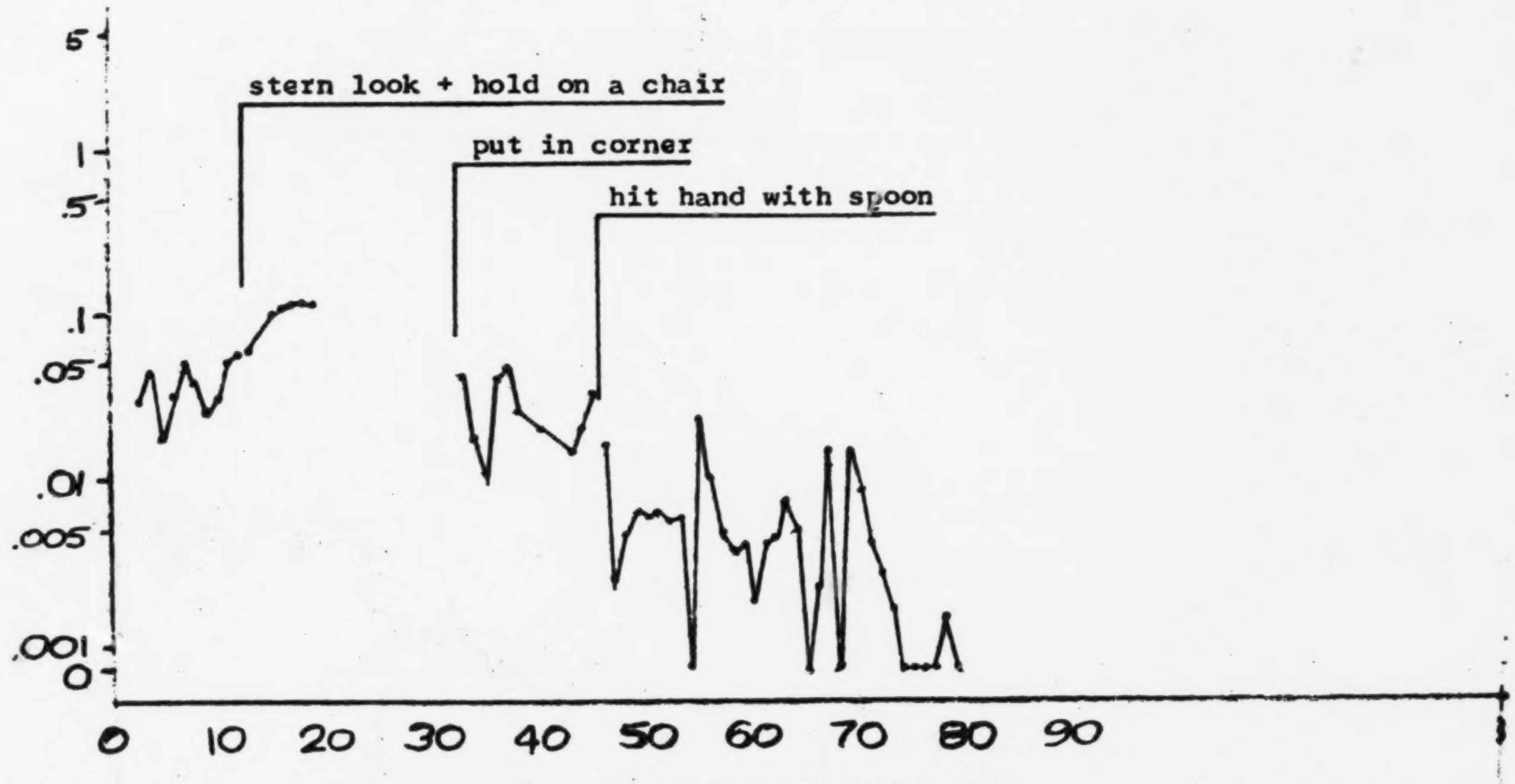
Mrs. J. had expressed considerable enthusiasm about learning behavior modification techniques and was being given advisement in the Behavior Modification Clinic. However, during the first eight weeks of advisement, she completed one non-successful project during which she failed to record ten days of behavior, cancelled one appointment and forgot another, and consistently failed to graph her rates. The advisor decided to apply a consequence to her behavior. The advisor told her (as congenially as possible) that if she missed more than one appointment her daughter would be kept out of preschool for one



H.	F.	Mrs. R.		B. R.	4
TRAINER	ADVISER	MANAGER		PROTEGE	AGE
				COOKS MOVEMENT	

Figure 1.

P.V. 4 Take out earmold
Protege Age Movement



H. M. Mr. & Mrs. V. SUCCESSIVE CALENDAR DAYS
TRAINER ADVISER MANAGER

Figure 2.

week, and that a failure to bring a completed graph of the week's behavior to the meeting would be considered a missed appointment. Mrs. J. objected strenuously to this consequence, complaining that it would punish her daughter and not her, and predicting that it would not work. Nevertheless, in the next five weeks, she completed one successful project, consistently appeared with her rates graphed accurately, and began other projects on her own which she carried out. She showed considerable energy and ingenuity in carrying out projects. She did miss making one scheduled phone call, but the consequence never had to be used.

TEACHER TRAINING

In many respects, the teachers in the PHC and preschool seemed ideally suited to serve as parent advisors. They all had some degree of familiarity with behavior modification techniques, they were all acutely aware of the potential educational handicap caused by behavior problems, and they were already seeing the parents of the children involved.

Teachers served as advisors to parents in approximately half of the projects discussed in this paper. A teacher met with her trainer as needed, to report on the progress of parents under her advisement and discuss problems in the execution of the projects or the parent behavior. The teacher was required to bring to the session data from the projects currently being carried out under her advisement.

Teachers presented some of the same problems as parents. They did sometimes miss appointments, bring incomplete data, etc. In this particular program, a public record of the teacher's behavior, posted where other teachers could see it, was effective in encouraging the teacher to carry out her planned program.

RESULTS

Thirteen mothers and one father undertook a total of thirty behavior modification projects. Nine completed projects could not be evaluated for purposes of this report, in most cases because the parent had failed to record a baseline before he began consequating. In fourteen of the remaining twenty-four projects the behavior was changed to the extent that there was a probability of .003 or less that the change could have been due to chance. In three projects, the change in behavior was small, with a probability of .091 or greater that the change could have been due to chance. In two projects there was no change in the behavior. Two projects were not completed. Of those projects whose success could be evaluated, 66% were successful (i.e. produced a change in behavior which could not be ascribed to chance.)

Of the fourteen parents seen, nine modified at least one of their child's problem behaviors with demonstrated success while under advisement. One parent successfully modified two behaviors, one successfully modified three behaviors, and one mother successfully modified two of her child's behaviors plus one of her own. The projects attempted by each parent, and their outcomes, are listed in Table 1.

Success of the program is estimated conservatively in the foregoing paragraphs. For example, Mrs. E. C. was having many urgent problems with her son and therefore she was allowed to complete projects without going through the time-consuming process of gathering a baseline. It was clear from trends in the data and from striking changes in her child's behavior that her projects were effective, but they could not be counted as successful under our criteria.

Exact records of advisory time and total time each parent was seen were not kept, so the following results were estimated from approximate records of length of time each parent was seen, and partial records of advisory time. The estimated average span of time a parent was seen was 13 weeks, with individual times ranging from 4 weeks to 23 weeks. Estimated average advisor time per parent was 5.25 hours.

DISCUSSION

The results of this program indicate that parents of hearing handicapped children can successfully use behavior modification methods to alter behaviors of the child that are a problem in the home, and to alter behaviors that have a direct bearing on the child's special educational problems. Parents in this program were able to decrease significantly the number of tantrums, annoying mealtime behaviors, hitting, yelling, running off, etc. They were also able to get their children to wear their hearing aids and to watch a speaker's lips, using behavior

Parent	Target Behavior	Desired direction of rate change	Consequence	& Outcome	* Inc.	# N.B.	+ S.	% N.S.
Mrs. B.C.	grab and throw	decelerate	not recorded	no baseline				
	cross boundary	decelerate	swat + 5 min. off tricycle	no baseline				
	turn at boundary	accelerate	candy	no baseline				
	run off	decelerate	not recorded	no baseline				
	obey	accelerate	praise + food	dropped for more specific target				
	disobey	decelerate	swat + time out in room 2 min.	"	2	4		
Mrs. H.R.	tantrum	decelerate	time out in room	.002				
	hit	decelerate	wear glove	.00005			2	
Mrs. D.S.	pick at self	decelerate	wear glove 10 min.	.0002				
	hit mother	decelerate	mother walk away	.001				
	wear aid	accelerate	TV and records	.00005			3	
Mrs. C.J.	tantrum	decelerate	sit on chair	.28				
	wet pants	decelerate	time out in room	not completed		1		1
Mrs. D.J.	up during meal	decelerate	time out in room	.091				
	look at speaker's lips	accelerate	candy	.0000001				
	(mother) give sentences	accelerate	beauty parlor money	.0000000006				
	negative behavior (say no or disobey)	decelerate	time out in room	.000000004			3	1
Mrs. S.A.	negative behavior	decelerate	time out in closet	.0000011				
	hit other child	decelerate	on chair with glove on 3 min.	.16			1	1

Parent	Target Behavior	Desired direction of rate change	Consequence	& Outcome	* Inc.	# N.E.	+ S.	% N.S.
Mrs. R.C.	bites of new food look at speaker's lips	accelerate accelerate	not recorded	no baseline unrealiable data		2		
Mrs. S.R.	look at speaker's lips	accelerate	tally (to be cashed in for candy or toy	.0000006			1	
Mrs. P.V.	take out earmold	decelerate	hit hand with spoon	.0000089			1	
Mrs. D.A.	look away from speaker	decelerate	shake hands; grab chin; pinch	no change				1
Mr. D.A.	out of bed look at speaker's lips	decelerate accelerate	swat; tie in bed after first behavior	no change not completed		1		1
Mrs. P.	up during meal yell	decelerate decelerate	on chair away from table on chair in corner	no baseline .000037		1	1	
Mrs. B.	food on floor during meal	decelerate	on chair in corner 2 min.	.003			1	
Mrs. K.	food on floor during meal	decelerate	time out on chair 2 min.	.001			1	
			TOTALS		2	9	14	5

& Numbers in this column indicate that the desired change occurred--the number is the probability that the change was due to chance.

* Project dropped or not completed.

Not evaluated because of lack of baseline data

+ Successful--a behavioral change with chance probability less than .003

% Not successful--no change in behavior or a change which may have been due to chance

Table 1. Behavior modification projects attempted and their outcomes.

modification techniques. All of these behavioral changes were accomplished with relatively benign punishments and small, inexpensive rewards. They were accomplished with a small investment of professional time, as well.

In an attempt to evaluate the effect that learning behavior modification techniques has had on the parents involved, a questionnaire was sent to them. Parents were urged to return the questionnaire, but the letter to them stressed that they were in no way required to. Of the thirteen questionnaires sent, eight were returned. The parents were urged to be frank in their replies. The need for honest criticism was stressed.

Answers to the questionnaires reflect interestingly the human impact of the program. Obviously, for some parents behavior modification did not answer their problems to any significant degree. For an encouraging number of parents, however, the gain was significant and well worth the amount of time and effort expended. The following excerpts are in answer to questions about whether or not they felt learning to do behavior modification helped them:

"It helped me feel less frustrated and this helped me use a more organized and level headed approach with him (I had been getting fairly upset with him - - to say the least)."

"Behavior Modification hasn't worked miracles, but it has been most effective in increasing (our child's) looking behavior. She is still in a behavior-mod program and is improving every week."

"When the children were being difficult I felt completely helpless and of course this gave me a positive approach to all problems."

"I believe it helped me -- some of the things I learned work great with my other children, but I don't believe I've been able to make any appreciable changes for better in the behavior of the child we were working with."

"It helped me because I never realized you could pick a complex problem and change it so quickly. I thoroughly enjoyed it."

"We saw improvement in the amount of screaming."

"I feel (our child) would have been a major problem had it not been for the clinic. Learning to direct (his) behavior the best way for him at an early age will certainly benefit him as much as it helped me and (his) father and brothers."

"(Our advisor) gave us a workable solution, it was simple and easy to follow her plan, and use the idea of reinforcing after completing the program."

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SLEEP HABITS, PROBLEMS and MANAGEMENT of PRESCHOOL CHILDREN

A pilot project based on a questionnaire soliciting opinions of mothers of hearing and hearing impaired children. Prepared in cooperation with the Kansas University Parent Home Center, and the Kansas University Medical Center Graduate School

Submitted to
Rollie R. Houchins, Ph.D.

by

Evelyn Moats Munger

July, 1969

INTRODUCTION:

Many studies have been conducted concerning the learning abilities and other aspects of the hearing impaired child. Few studies, however, exist which deal with the management per se of the deaf child.

One of the relatively new approaches to working with young, preschool deaf children and their mothers, has been the parent-home center, such as that of the Kansas University Medical Center. This and other such programs have brought new recognition to many child management problems.

Probably the most common "problems" mothers report seem to deal with sleep habits. Since there is relatively no information on the subject of sleep habits as they relate to the hearing impaired, it seems worthwhile to try to discover whether the beliefs of the mothers of hearing impaired children are correct. Do these mothers' beliefs differ from those of mothers of hearing children, and if so, how? The purpose of this report is to discover if there truly are differences in habits and management of the impaired hearing and normal hearing preschool child, and if so, what these differences are.

A questionnaire was developed to solicit the opinions of mothers of hearing and of hearing impaired preschool children, pertaining to their sleeping habits and management. The hearing impaired group consisted of children enrolled in the preschool or parent-home programs at the Kansas University Medical Center. The normal hearing group consisted of children from three local, private preschools in the Kansas City area. The mothers were able to fill in the questionnaires at their leisure and return.

The questionnaire consisted of twenty-six general questions. A copy of the questionnaire appears in the Appendix. The results showed generally that there are some specific differences in sleep habits and management, but the majority are comparable. The differences and similarities will be discussed latter, under results.

This is a pilot project and therefore, at best, only indicates areas in which further study in depth might be valuable. It is felt that this project points out several such areas of potential study.

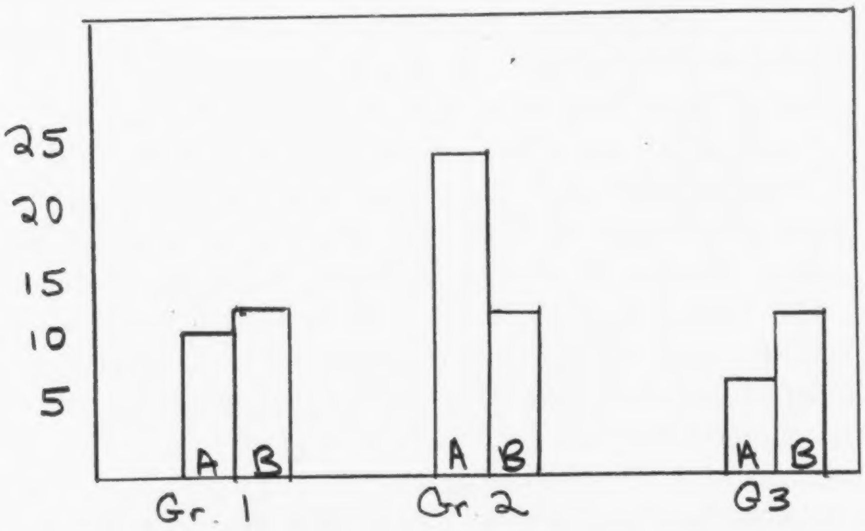
GENERAL PROCEDURE:

The eighty subjects of this study consisted of two groups of preschool children, ages 2-5 through age 6 years, and their mothers. Group A consisted of forty-two children with hearing impairments, enrolled in the preschool or parent-home program at the Kansas

University Medical Center, and Group B, consisted of thirty-eight children from three Kansas City area private preschools.

The questionnaires were distributed to the mothers in each group, to be filled out at their leisure and returned. The questionnaire consisted of twenty-six general questions relating to sleeping habits, management and conditions. For purposes of analysis and tabulation, Groups A and B were subdivided into three age groups: Group I, 2 years 5 months to 3 years 11 months; Group II, 4 years to 4 years 11 months; Group III, 5 years to 6 years.

Distribution within groups



Tabulations were made individually by age groups and reduced to percentages. The groups were compared by age groups and then summarized as totals between major groups A and B, See Appendix

RESULTS AND DISCUSSION:

The first four questions of the questionnaire were concerned with the conditions existing in the child's sleeping environment.

Questions one, dealt with the number of children in the family. It was found that Group A, averaged 2.9 and Group B, averaged 2.1 children per family.

The second question was, "Does the child share a bedroom with anyone?" It was found that 50.4% of Group A, shared a bedroom as opposed to 37.3% of Group B. Mathematically, this is a significant difference of 12%, however, further study would be required to determine its importance and relationship to sleep problems.

Question 3 was related to the relative location of the bedroom to the major activity areas of the home. No significant difference was found. Both groups were divided about evenly as to those bedrooms on the same level as the kitchen and/or living room, and those not on this level. The majoriy of both groups were on the same level.

The fourth question asked the type of bed occupied by the child. Almost universally a single type bed was used by both groups.

The remaining questions dealt with sleeping habits and management. Questions five through eight related to the bedtimes of the family.

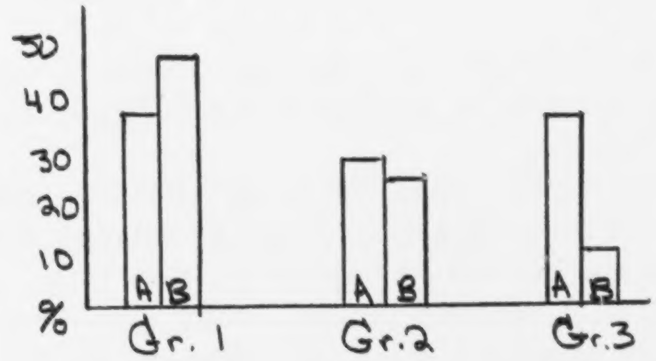
The average bedtime for all age brackets of major groups A and B was found to be 8:30. There was, however, a wide variation of individual bedtimes within the group, a range of 7:00 to 10:30.

The regularity of bedtimes was very stable, Group A reporting 88.3%, and Group B reporting 86.7% established bedtimes. When the group with non-established bedtimes was analyzed, it was found that in Group A, 100% had bedtime problems and in Group B, 80% had bedtime problems. This suggests a definite correlation between irregular bedtimes and sleeping problems. In 44% of these cases the mother rated the children as restless sleepers. The severest of the sleeping problems reported was that of bedwetting in a five year old. This area seems to warrant further research and study.

No significance was shown between the time the child and the other children in the family went to bed. The bedtime of the parents was also found to be of no significance.

Question 9 pertained to bedtime ritual. Group A reported 83.5% and Group B reported 86.9% as having some type of consistent bedtime ritual. The difference was not of significance.

The tenth question was, "Do you have a problem with your child at bedtime?" Group A reported 32.8% yes, and Group B reports 23.6% yes. There is a significant difference when the results are considered by age groups as shown in the graph below:



It should be noted that in the normal hearing Group B, sleeping problems decreased with age, whereas in Group A, the hearing impaired group notes no decrease.

There is also a significant difference in the number of problems in Group A and Group B. This seems to support the general feeling of the mothers of the hearing impaired children that bedtime management is more difficult and subject to more problems than management of their normal children.

The average sleep problems were: (1) not wanting to go to bed; (2) getting up in the night; (3) wanting to sleep in other than their own bed. A more severe problem was that of bed wetting. When this problem was further investigated, it was found there was one case in Group A, and four cases in Group B. The significance of this disproportionate relationship is not clear from this questionnaire, but further study might prove productive.

The mothers were next asked how they solve the bedtime problems. The answers although varied, tended to deal with only eliminating the immediate situation, with seemingly no real long term solution being sought.

The mothers were asked if their children awakened in the night. Group A had 80.6% yes, and Group B had 65.5% yes. This shows a mathematically significant difference, although a cause and effect relationship can not be drawn.

The question was asked, "Does your child refuse to stay in bed, and if he does, what do you do?" Group A reported 39.7% as refusing and Group B, 13.5% refusing. Consistently the parents reported their procedure was putting the child back into his own bed. Because of the universality of this practice, it is speculated that the direct relationship to management of the immediate situation is not the determining factor. This is, of course speculation, and more research and analysis are needed for proper interpretation.

One question the author found to be quite different than expected was that pertaining to the use of a night light. Group A, the hearing impaired, reports 24.4% using a night light, whereas Group B, the normal hearing, reports 68.6% using a light. Previously it had been thought the hearing impaired group required a night light more often. What relationship this may have to the variations in sleep habits between the two groups is not known.

Regarding the question of frequency of awakening at night, the mothers' answers were so varied, mathematical calculation was difficult, but a weighted average of the mothers' opinions shows Group A with approximately 1/3 higher frequency than Group B. A questionnaire with assigned times might yield significant defined material.

Next, the mothers were asked, "Are there specific occasions when your child awakens?" The mothers reported the occasions tended to be when there was company, illness or when the child was overly tired. Otherwise, trips to the bathroom and a drink were the usual causes.

The child's nap habits were explored and it was found that Group A had 63.2% taking naps, whereas Group B had 97.4% taking naps. This is mathematically significant although the relationship is not known. It might be recalled that Group A also has a greater number of sleep problems.

The final question was, "Is the child a sound or restless sleeper?" It is interesting to note that despite all the differences between groups, Group A ranked 76.6% sound sleepers, and Group B, 76.1% sound sleepers.

GENERAL MODIFICATIONS:

This study was a pilot study using a relatively small sample. For a more extensive study this sample should be larger. The questionnaire was general and non-specific to a great extent, since it solicited the opinions of the mothers.

If a follow-up study were made, a more specific questionnaire or possibly an interview approach might be used. The questions should be less broad and better suited to mathematical computation. This would give more measurable results.

SUMMARY AND CONCLUSIONS:

Eighty mothers of preschool children were given questionnaires on the sleep habits and management of their children. Of the eighty children, 42 had hearing impairments and were labeled Group A. Thirty-eight had no hearing problems and were labeled Group B. All children were in private preschool programs.

Each of the major groups A and B, were subdivided into three age groups; I, 2 years 5 months through 3 years 11 months; II, 4 years through 4 years 11 months; and III, 5 years through 6 years. The information was tabulated and compared for the major and sub-groups.

The results show that there are significant differences in the sleep habits and management of hearing and hearing impaired preschoolers, as follows:

It was found that preschool hearing impaired children:

1. Average more children per family.
2. Share a bedroom in a greater proportion of families.
3. Have comparable regularity of bedtime.
4. Show a higher rate of sleep problems. It was found that with age, the problems decreased with normal hearing children, but did not for hearing impaired children.
5. Have fewer severe sleep problems, specifically bed-wetting, than normal hearing children.
6. Have substantially more reported awakenings at night.
7. Have almost three times as many children refusing to stay in bed at night.
8. Use only 1/3 as many lights at night as normal hearing children.
9. Have about 1/3 higher frequency of awakening at night than normal hearing group.
10. Take 1/3 less naps than the hearing group. It might be recalled that this group also had more sleep problems.

It is of interest that the mothers of both groups ranked their children as sound sleepers in almost the same percentage of cases.

The results show that further study is required to determine the significance of these mathematical differences. In conclusion, I feel this study has shown that the area of sleep habits and child management is one in which further study is needed.

SUMMARY OF TABULATIONS
ON SLEEP HABITS AND
MANAGEMENT

	B	A		Normal			Hearing Impaired	
	Normal	Hearing Impaired	I	I	III	I	II	III
Avg. # Children in fam.	2.10	2.90	2.4	2.15	1.76	2.69	2.86	3.16
% share bedroom	37.3	50.4	58.3	23.0	30.7	61.5	56.5	33.3
% Lvgroom level	81.8	83.1	91.6	76.9	76.9	92.3	73.9	83.3
% single bed	100.0	100.0	100.00	100.00	100.0	100.0	100.0	100.0
% regular bedtime	86.7	88.3	83.3	84.6	92.3	91.6	86.9	86.6
Avg. time to bed	8:30	8:30	8:30	8:30	8:30	8:30	8:30	8:30
% same time as oth.ch.	68.3	53.5	75.0	50.0	80.0	53.8	56.6	50.0
% parents later to bed	97.2	95.6	91.6	100.0	100.0	100.0	86.9	100.0
% ritual before bedtime	86.9	83.5	91.6	76.9	92.3	84.6	82.6	83.3
% bedtime problems	23.6	32.8	50.0	23.1	7.7	38.4	26.8	33.3
% problem sleeping hab.	34.4	64.0	41.6	23.1	38.4	76.9	65.2	50.0
% awakens at night	65.5	80.6	66.6	68.4	61.5	84.6	73.9	83.3
% refuse to stay bed	13.5	39.7	25.0	7.7	7.7	30.7	21.7	66.6
% have night light	68.6	24.4	75.0	69.2	61.5	38.4	34.8	0
% sleep alone	97.2	91.3	91.6	100.0	100.0	100.0	73.8	100.0
% awaken in night	70.9	84.9	66.6	76.9	69.2	84.6	86.9	83.3
% Nap during day	97.4	63.2	100.0	92.3	100.0	100.0	56.5	33.3
Avg. length nap (hrs)	1.4	1.6	1.4	1.5	1.4	1.7	1.9	1.3
% Sound sleeper	76.1	76.6	67.0	84.6	76.9	53.8	82.6	83.3

UNIVERSITY OF KANSAS MEDICAL CENTER
HEARING AND SPEECH DEPARTMENT
PARENT-HOME CENTER
SLEEP QUESTIONNAIRE

FATHER'S NAME ______________________ AGE ____ OCCUPATION ____________________

MOTHER'S NAME ______________________ AGE ____ OCCUPATION ____________________

NUMBER OF CHILDREN IN FAMILY ____

NAME OF CHILD WITH HEARING PROBLEM ____________________ BIRTHDATE ____________

DOES CHILD SHARE BEDROOM WITH ANYONE? _____________________________________

IS CHILD'S BEDROOM ON LEVEL WITH LIVING ROOM AND/OR KITCHEN? ______________

IN WHAT TYPE OF BED DOES YOUR CHILD SLEEP? ________________________________

DOES THE CHILD GO TO BED AT THE SAME TIME EVERYNIGHT? ________ WHEN? _________

WHAT TIME DO YOUR OTHER CHILDREN GO TO BED? _______________________________

WHAT TIME DO PARENTS GO TO BED? ____

IS THERE ANY RITUAL BEFORE GOING TO BED (BATH, CANDY, STORY, ETC.)? ___________

DESCRIBE ____

DO YOU NOW HAVE A PROBLEM WITH YOUR CHILD AT BEDTIME? _____________________

IF YES, DESCRIBE ____

____

DID YOU EVER HAVE A PROBLEM CONCERNING YOUR CHILD'S SLEEPING HABITS? __________

____

HOW WAS IT SOLVED? ____

____

WHEN DID THIS SLEEPING PROBLEM BEGIN? _____________________________________

DOES YOUR CHILD AWAKEN IN THE NIGHT? ______________________________________

WHAT DO YOU DO WHEN YOUR CHILD AWAKENS? ___________________________________

DOES YOUR CHILD REFUSE TO STAY IN BED? ____________________________________

WHAT DO YOU DO WHEN CHILD GETS OUT OF BED? _________________________________

DO YOU LEAVE A LIGHT ON FOR YOUR CHILD? ________ TYPE OF LIGHT? ______________

DOES YOUR CHILD SLEEP IN HIS OWN BED, OR DOES HE SOMETIMES SLEEP WITH OTHERS? ________

WHOM? ________

DOES YOUR CHILD AWAKEN IN THE NIGHT? ________

HOW OFTEN? ________

DOES THIS HAPPEN ON SPECIFIC OCCASIONS? ________

DESCRIBE ________

____

WHAT IS THE USUAL REASON FOR HIS AWAKENING? ________

WHAT DO YOU DO? ________

DOES YOUR CHILD TAKE A NAP DURING THE DAY? ________ FOR HOW LONG? ________

WOULD YOU SAY YOUR CHILD IS A SOUND, LIGHT, OR RESTLESS SLEEPER? ________

DESCRIBE OR EXPLAIN ________

____

COMMENTS:

PROFOUND DEAFNESS AS A LINGUISTIC PROBLEM

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The purpose of this paper will be to describe procedures that have been developed for improving better communication with severely and profoundly hearing impaired children.

Initial Parent Institutes

In 1949 the first Institute for parents and their hearing impaired children was held for one week under the joint sponsorship of the Hearing and Speech Department of the University of Kansas Medical Center in Kansas City, Kansas and the Kansas School for the Deaf in Olathe, Kansas. The purpose was to carry out diagnosis, to give parents as much information as was possible about their hearing impaired child, and to give them ways of working with their child. They were lectured to, and talked to, and demonstrated for, but many parents were not able to translate the information into a program to be carried out at home once the institute was over. Some were able to return to the Medical Center for monthly visits until their child was able to enter the preschool at the Center when the child reached the age of three, or the State Residential School when the child reached the age of six. This Institute has continued for the past 21 years, but the foucs, emphasis and program has gradually changed.

Parent Home Project

In 1965 the John Tracy Clinic initiated a new type of program called a Home Training Program. It was so successful that a number of other programs were asked to join them in implementing similar programs. Some were funded under grants from the U.S. Office of Education while others were developed by their own institutions. The Hearing and Speech Department of the University of Kansas Medical Center was awarded a grant on April 1, 1967 for a three year period.

Setting

An old house located near the hospital was used for the program. It contained the usual furnishings for middle class America, which is a living room, dining room, bedroom, bathroom and kitchen. It was furnished through gifts from the Women's City Club, parents and friends.

Referral Sources

After an initial diagnosis by the family physician, Otologist, Audiologist and Parent Counselor of the Medical Center, the child and his family were referred to the home. In the past, parents watched the instructor and then attempted to emulate the teaching skills of the professional. The professional carried out the activities in a classroom or office. In the Parent Home Project, the teacher of the deaf became the teacher of the parent, while the parent was the teacher of the child. The teacher and the parents discussed an activity that might be carried out in the home; such as giving a bath, putting away groceries, making pudding, shining shoes, vacuuming the floor. Approximately one third of the time was spent planning and answering questions, and a third on each of two activities.

Model

In Figure 1 you will see a model. The teacher is Block 1, the parent Block 2, while the child is Block 3. It has been noted in the past that as parents talk to their children and the children respond, parents continue to talk. Most parents of hearing impaired children gradually reduce their verbalizations when the child does not respond. You will note that the parent in our model talks to the child, and the parent's performance is reinforced by the teacher. The teacher will say, "That is it. You held your head still." or "Yes, that's right. You caused him to look." or "That's good, you helped him to respond to the vibration of the vacuum cleaner." The teacher is reinforced by the parents' correct behavior or by her paycheck!

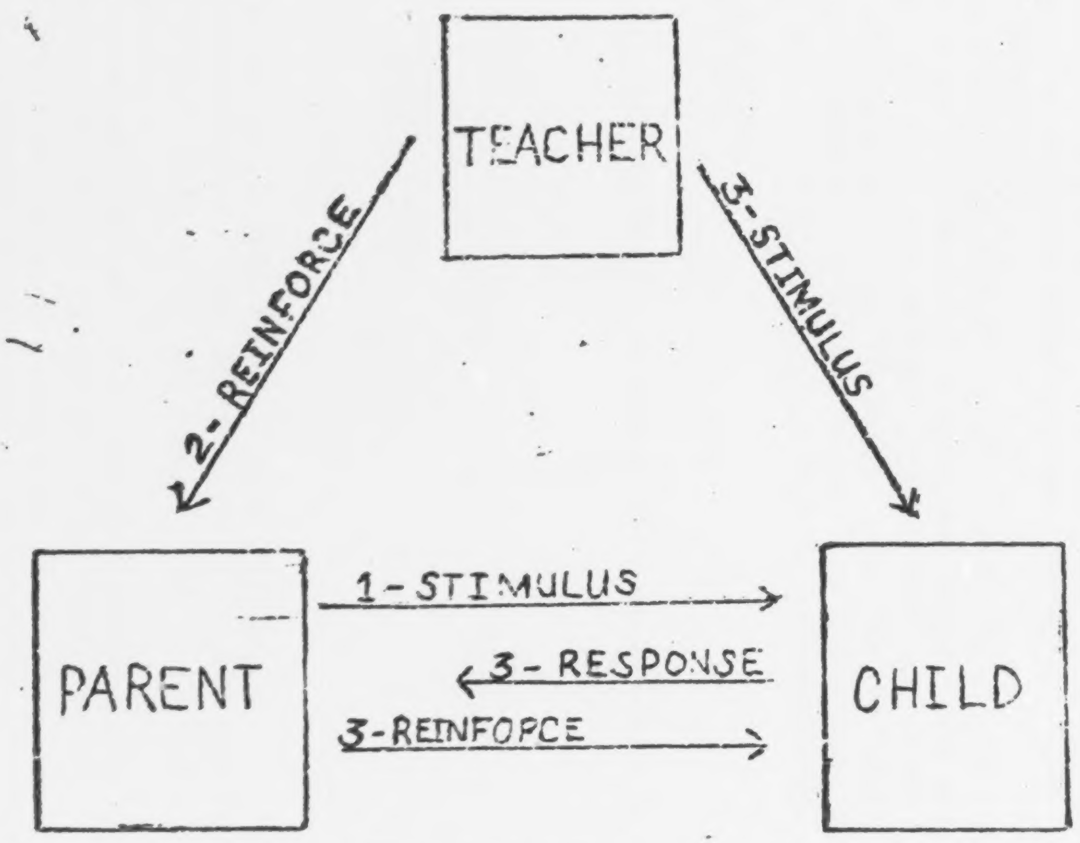
TEACHER
2- REINFORCE
3-STIMULUS
PARENT
CHILD
1- STIMULUS
3- RESPONSE
3-REINFORCE

Figure 1

Population

There have been 114 children and their parents eligible for enrollment in the Parent Home Program. Ninety-one were carried for the entire program and then enrolled in a preschool if there was one available in the community, or a day school or residential school at the age of six if a preschool was not available. There were 58 boys and 56 girls. Nine were dropouts between the first and fourth visit. Forty-six of the children were reported to be deaf because of the mother having had rubella during the pregnancy, seven because of hereditary causes, 11 from meningitis, five from Rh incompatibility, and 45 from unknown causes.

In Table 1 you will note that 94 of the children were able to respond to audiometer evaluations. The group whose loss was thought to be caused by rubella in the mother were in each category.

Table 1

Hearing Loss

	ISO	Rubella	Other	Total
Mild Loss	30-50	1	2	3
Moderate Loss	50-70	7	6	13
Severe Loss	70-90	5	31	36
Profound Loss	90-	10	32	42
	Total	23	71	94

Behavior Management Training

It was determined very early that the majority of parents were afraid to discipline their hearing impaired child. On questionaires, many parents checked that the child was stubborn. Of course, many children were in their "Terrible Two" phase. Therefore, it became necessary to teach the parents behavioral management before the child could be given a psychological evaluation or more definitive hearing aid evaluation and recommendation.

Parents were asked what behavior bothered them the most. Once this was determined, they were asked to record the number of times the child initiated or carried out this disturbing behavior. The parents were then asked to reinforce the behavior that was desired and to decelerate that which was displeasing. To demonstrate this procedure, I have chosen a child whose hearing loss is due to rubella. He has a 40 dB hearing loss in his right ear and only a response of 70 dB at 1000 Hertz.

Figure 2 is a record of the behavior the mother wished to eliminate. Time is recorded on the horizontal axis and frequency in terms of rate per minute on the vertical.

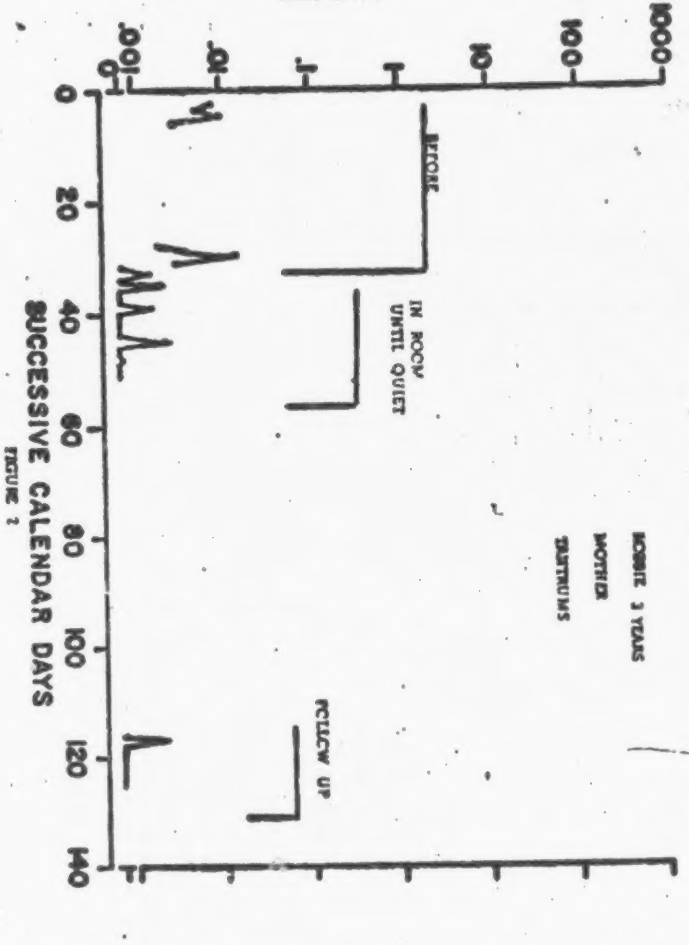
FREQUENCY
1000
100
10
1
.1
.01
.001
0
BEFORE
IN ROOM UNTIL QUIET
ROBBIE 3 YEARS
MOTHER
TANTRUMS
FOLLOW UP
0
20
40
60
80
100
120
140
SUCCESSIVE CALENDAR DAYS

FIGURE 2

You will note that the child threw four tantrums per day during the first five weeks. The mother was then taught to place him in a quiet room without toys and require him to stay there until he was quiet for ten minutes. You will then note immediate reduction of the number of tantrums by the end of the first week of treatment. The consequence for the parent was that the child could not have a hearing aid, or be entered into a program until his behavior was under control. You will note from the graph that in five weeks he could enter into the program.

In Figure 3 observe the tenfold reduction of hitting rate after the child wore a white glove as a consequence.

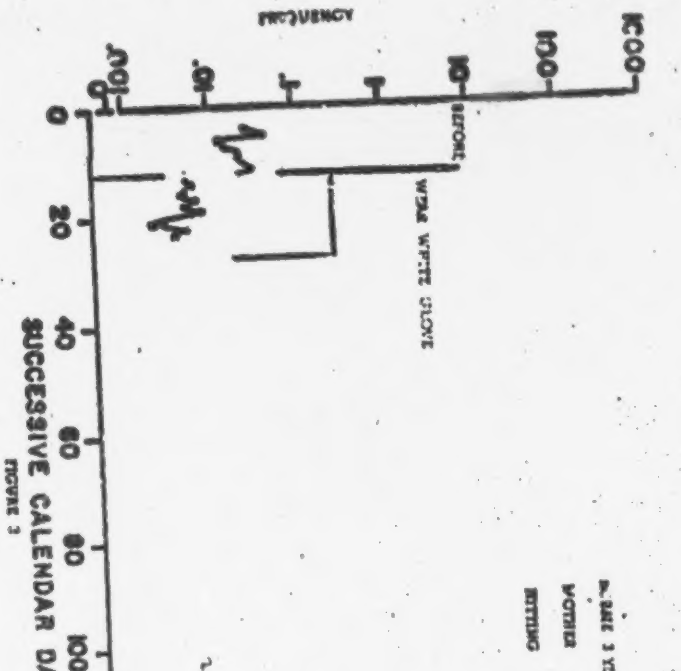

FIGURE 3

Listening Behavior

After the teachers helped a parent with child management they began to help the parent in getting the child to listen and use his residual hearing as well as learn to look so that he could eventually speechread. Although many of the children had been diagnosed as having a hearing loss, the staff was not satisfied until a puretone audiogram was obtained. The hearing aid was not recommended until a number of tests had been given. Initially the audiologist for the project used a technique similar to that of the Peep-Show. A mechanical toy was placed on the top of each free-field speaker. The tone was given and the child's attention directed to the toy dog which bowed on the left speaker, or the Indian that beat the tom-tom on the right speaker. These toys are about 25 cm. tall and were encased in a plastic box. After the child was conditioned to free-field sound, he was then introduced to the headphones and the task repeated. The teaching was quite useful. During the past year an operant paradigm has been used and marbles have been dispensed when the child responded correctly. These marbles were traded for a toy of the child's choice.

Beginning Auditory Training

One of the children refused to keep the earmold in his ear. Behavior management was used. Please note Figure 4. The child kept removing the mold from his ear. The parent was allowed to choose a consequence for the removing of the mold. This parent chose to spank the child's hand with a wooden spoon. While the staff would not have chosen such a consequence, once the family selected a consequence the staff did not interfere. Nevertheless, you will see that the baseline data showed an average of .05 per minute or about once every 35 minutes before anything was used. A stern look accelerated the removal to about once every ten minutes, while sitting in the corner decelerated slightly below the baseline level. After a spank with the wooden spoon you will observe noticeable decrease in removal of mold to zero per minute.

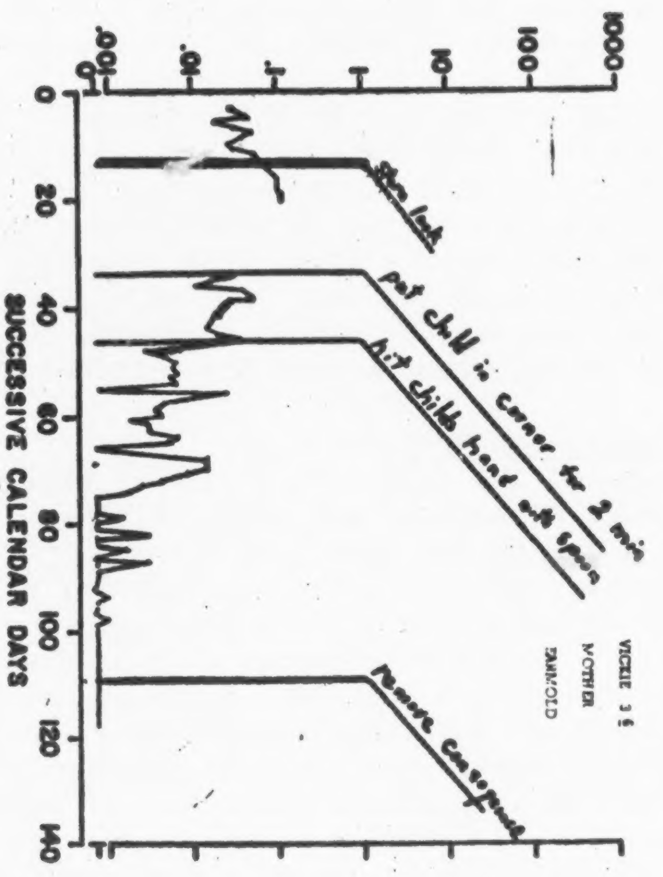
VICKIE 3♀
MOTHER
TANK/OLD
1000
100
10
1
.1
.01
.001
0
0
20
40
60
80
100
120
140
SUCCESSIVE CALENDAR DAYS
Stare look
put child in corner for 2 min
hit childs hand with spoon
Remove Consequence

Figure 4

Once the hearing aid is on, the child begins to get sounds louder. Usually the children choose to ignore the sound until the parent calls attention to the sound or noise. Some children respond to sounds in the normal environment. The parent is taught to point out the sounds. This task was difficult for some parents. The parents ignored the sounds, or had learned to function in a noisy environment.

Looking Behavior

Another staff member studied the visual responses or the number of times a parent could get the child to look at his face or mouth. It was found that a parent can get his child to look six times per minute for a short phrase. As the oral sentence is lengthened, the number of separate looks per minute decreases. Getting the child to look when this is the desired response can reinforce the parent and make him speak again. The number of looks for a three minute interval ranged from zero to 75 looks with an average of 11.5. It is reasonable to expect that a child with only a fragmented hearing loss cannot get much information auditorily until he attends to the signal. Not only must his auditory attention be gained, but he must look and perceive.

Level of Language

The next problem that met the staff was to determine the language to be used with the child, the topic of that language, the situation, and the length of the sentence or phrase . It was determined quite early that there would be no drilling on lists of nouns, but that a number of verbs combined with a few nouns would be chosen so that when the child started to use his small vocabulary it would be a vocabulary that the child could use to control or manipulate his environment. This he would reinforce by his own verbal utterance. Whettnal and Fry said that a child should hear something "loud enough and often enough" in order to learn to listen. We believe it should be "loud enough, often enough, and meaningful enough" that he will want to use it.

For example, the parent may say, "You want up" as the child holds his arms up to the parent in order to be picked up. Before long the child will attempt to use the word "up" or open and shut his mouth with a vocal utterance in imitation. One of the most difficult tasks for the parents to learn was the type of language they should use for the child to receive visually and auditorily. Stress was placed on implementing the child's understanding of language and secondary importance was given to the expressive aspects of language, since it follows sequentially in the hierarchy of language development. Two aspects of stimulating the child's understanding of language were presented.

1) Learning to listen with a hearing aid, if recommended, and

2) The parent talking to the child.

The expressive aspect of language (speech) was stressed through helping parents recognize and applaud beginning speech efforts such as breath, voice and vowel utterances.

Parents were helped to become aware of matching their language to the actions or object which the child was observing to assist him in doing the auditory and visual matching necessary for language development. The language itself, was that usually heard by all infants and preschool children; the language of the home, the neighborhood and the community.

Examples frequently given were "Here's your milk." when handing the child a glass of milk; or "Open the door." before doing so; or "Let's put it on the table." when setting the table.

Using the same techniques that the parents first used with the child for general management, the parents were helped to reward the child for good vocal utterance and either give negative reinforcement or punishment for screaming and yelling. These then became the first steps in developing oral communication.

It took some time after the parent understood each of the above steps (that is, child management, listening, looking, language level, input procedure and reinforcement for vocal utterance) to learn to integrate and use them in a normal manner at all times.

There appears to be differences in the children and the parents as it relates to the time at which the child was found to have a hearing loss, the time the program was initiated, ability of the parent to plan lessons as well as continue with the program. Naturally those children with severe losses that were fragmented had greater difficulty than did those children who had hearing of 500, 1000, 2000 and 4000 Hz.

Some of the children who lived in the greater Kansas City area entered one of four preschool groups at the Medical Center. The class teachers continued a similar type of program. The parents were brought into the school and sometimes were used as teacher aids in reviewing material, preparing material, or by taking data on classroom responses.

The teacher of the deaf then began shaping the oral utterance, lengthening the responses as it relates to intonation, rhythm, and number of words used in each utterance, phrase, or sentence.

Evaluation

Evaluation of any program is quite difficult. Since our program has accepted multiply handicapped children as well as the "normal" hearing impaired, the evaluation was compounded. Since the children ranged in age from two months to six years, it should be recognized that there is a lack of appropriate tools for evaluating language levels of severely and profoundly hearing impaired children.

During the first year of the project the Vineland Test of Social Maturity, the Boone Infant Speech and Language Development Scale, Watson & Pickles Language Development Scale, and the Griffiths Mental Development Scale were used as evaluative measures. Per-minute rate of the child's looks at the speaker's mouth was also computed. The parent was evaluated by a subjective evaluation using the Shontz scheme of levels of anxiety.

In the second year, the Preschool Attainment Record replaced the Vineland; the Boone Infant Speech and Language Development, as well as the Watson & Pickles Language Development Scale continued to be used. Teachers in the project developed charts or check lists for noting progress, etc. A video tape recorder and camera were purchased in order to improve the evaluation and teaching procedures. To use this equipment effectively, a procedure for filming various behaviors such as responses to noise makers, ability to speechread, understanding of language, and attempts at speech was developed. The parents and child were recorded on the first visit for baseline data and then recorded again at 12 week intervals. The tapes were then scored to determine progress.

Conclusions

Much growth could be seen concerning looking behavior and speechreading on successive videotaping. The most significant gains on looking were made from the first to the twelfth week. Thereafter the behavior maintained and changes were slight.

Subjective judgments of the teachers indicated that the responses of the children to sounds showed increased use of residual hearing. Most of the children were wearing their hearing aids during all waking hours within two weeks from the time they were secured.

Impartial viewers of the videotapes indicated that the parents seemed better able to manage their children on succeeding tapes; the children appeared to interact better with their parents than with the teachers.

It appears that by the age of three, those that had attended the complete home program and had not entered preschool were making some vocalizations or babblings, and now and then uttering a word such as "no", "up", or "bye-bye" which could be understood. Early identification and early parent education are prerequisites for these behaviors.

ACKNOWLEDGMENT

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PROGRAM FOR PARENTS OF HEARING IMPAIRED CHILDREN

CHILD GROWTH AND DEVELOPMENT

Physical
Mental
Social - Emotional

Compiled for the Parent-Home Center of
The Hearing and Speech Department
By Sister Patrick Moylan

Summer - 1969

PROGRAM FOR PARENTS OF HEARING IMPAIRED CHILDREN

CHILD GROWTH AND DEVELOPMENT

Generalizations about development:

I. Proceeds in an orderly fashion.

II. Rate is not constant.

III. Different parts, systems, each have their own individual patterns and sequence of development.

IV. Development includes processes of individuation and generalization.

V. The goal is self-realization.

VI. Developmental status of infant and child can be determined by his reactions (behavior).

  A. Reflex - voluntary - spontaneous - learned.

  B. Average behavior does not mean the same thing as "best" behavior or "healthy" behavior.

	PHYSICAL	
	MOTOR	VISUAL
Newborn to 1 mo	Head sags. T-N-R (tonic-neck-reflex) reflex like activities (sucking, swallowing, tongue movements, gross bodily activities).	Vague consciousness of light, dim awareness of blurs of darkness, stares vaguely at surroundings; countenance is impassive, but he quiets his activity when he regards a large area of light or when the face of his mother or attendant comes into line of vision. Gives attention to object brought within several inches of his eye; only sporadic glances when object is farther away.
1½ mo.		Fixates on objects ranging 1-3 ft. away. Eyes and head tend to move together. As he lies supine, he looks downward, not upward, to pursue a moving person.
2 mo.		Intrigued by bright objects.
3 mo.		Enjoys glisten of a brightly colored picture book as pages are turned. May cry when light is turned off. Manifests both searching and absorbed regard for lumionosities, shadows, and persons. Rolls eyes upward to pursue person. Genuine visual predilection for hands. Arms move, but he picks up the physical environment with eyes alone.
4 mo.	Head steady; symmetrical postures hands open. Enjoys sitting up for a time propped up by cushions.	Rotates head to shift from one locus to another. Able to let visual fixation shift with a facile release. (These automatic shifts of regard do not denote confusion, rather the emergence of a growing capacity for differential perception and finer visual discrimination. This is a form of ocular prehension, a forerunner of manual prehension.
5 mo.	Bodily posture, prehensory approach, and oculomotor set are completely knit together.	Before a mirror, gives regard to his face and activates his hands. When a toy drops, he pursues it with his eyes. Shows signs of increasing visual sophistication based on remembered experience, aware of strange surroundings.
6 mo.		Regard is more relaxed and versatile; less bound by a restricted focal area. May give selective regard to details; an intentful watcher.

	PHYSICAL	
	MOTOR	VISUAL
7 mo.	Sits, leaning forward on hands; grasps cube; rakes at a pellet. Cycle of eye-hand behavior repeats itself with endless variations throughout the day.	Eyes siege upon some identifying clue (color) Enjoys being passed from one lap to another in the family circle, but left alone in the crib, finds almost equal pleasure in bringing his feet into the field of vision for grasping and manipulation.
8 mo.	Legs are strong enough to support the body but balance is unsatisfactory. Can move by dragging himself along the floor or by crawling.	Face often wears a questioning, half-confused expression. Greater sensitiveness in a new situation; even a familiar environment fatigues the child more readily because he has a deepening awareness of himself in relation to environment. Watches with new penetration the actions and movements of people around him. A dawning awareness of distance and location; he localizes sights and sounds well beyond the reach of his arms. Listens and looks when he hears footsteps. Audition serves to reinforce visual "projections." Visual memory - an identification in space, a realization of locus.
9 mo.		Less anxious; better orientated in space. Peers into people's faces, empty cup, etc. Not sure he sees the bottom of the cup as bottom.
10 mo.	Sits alone. Creeps. Pulls to feet. Crude prehensory release. Motor equipment increases radius as well as precision of his occupations of space. Rotates head and trunk with greater facility.	Sweeps eyes freely across arcs of 180°. Tips head back to gaze upward. In the presence of more than one object, he manifests an awarenss of more than one: a dim sense of two-ness, of container and contained, of solid and hallow, of top and bottom, of one side and the other side. Regards situations as a whole.
11 mo.	Can sit and play with a single toy for a solid hour.	Object doesn't have to be in motion to enlist his interest.
12 mo.	Walks without help; cruises. Prehends pellet with precision. Likes to meet new people; inclined to repeat performances that are laughed at; enjoys applause; reciprocates in simple back-and-forth play.	Organizing the spatial domain. Likes to watch motion of cars, animals, etc. Shows new awareness of twilight, dark corners, and closets. Seems to enjoy the exercise of projective blinking as he noisily bangs his playthings. Undergoes tridimensional differentiation. Much interested in buttons, flowers, and bright objects. Perceives emotional expressions. Spatial sense of position and distance is more sophisticated. Raises his arms to gesutre "up", wriggles and looks down when he means "down."

MENTAL

	ADAPTIVE	LANGUAGE
0-1 mo.	Absence of genuine intelligent behavior. Use of reflexes.	Crying. Babbling may start as early as the 3rd week, but usually around the 7th or 8th week. Sounds are merely muscular reflexes; small throaty sounds.
1-4 mo.	Activity is transformed into a function of experience. These behavior patterns prolong those of the first stage in that the needs connected with the reflex (sucking, looking, listening, crying, grasping, etc.) are still their only motive power without there being needs connected with derived and deferred aims (grasping in order to throw, in order to swing to and fro, etc.) These graspings lead to new results which are not pursued intentionally.	Babbling: When a child babbles he makes sounds that he has uttered in discomfort or contentment, now finding satisfaction in producing at will those sounds which at first have occurred involuntarily. Imitation: Crying when other children cry; 3-4 mo. vocal response to speech, imitation without meaning. Coos, laughs, vocalizes socially, listens to own vocalizations.
4-8 mo.	Consolidation by repetition of certain motor habits leading to effects in the surrounding milien which are of interest to the child. The accomplished of this stage constitute the first definite steps towards INTENTIONALITY or goal - orientation.	Crows, vocalizes eagerness. (The deaf child may smile, laugh, vocalize; but the vocalizations are reduced in range and amount. Laughter may diminish; smile may grow fainter because of secondary emotional consequences. Vocalizations become brief and monotonal. Absence of spontaneous sound improvisation is an early sympton of deafness.
8-12 mo.	Reactions begin to coordinate with each other to form new behavior totalities which are now unquestionably intentional. Advances are now made in the infant's use of signs or singlas to anticipate coming events.	8 mo. says one word; heeds name. Vocalizes several syllables such as "da-da" as sound play, to express eagerness, displeasure, satisfaction. (Deaf children use a more limited range of babbling sounds after six months.) Babbling continues until the child starts to use words in a meaningful manner and persists more than a year after the child starts to talk.

SOCIAL - EMOTIONAL

0-1 mo.	If he is upset and is picked up, shows signs of becoming calm. Regards faces.
4 mo.	Has acquired a feeling of familiarity with mother. Can smile and laugh. Plays with hand and dress. Recognizes bottle; poises mouth for food.
6 mo.	Fear of strange persons, objects, and situations.
7 mo.	High degree of self-sufficiency; not much time to spare for people around him. Plays with feet and toys. Expectant in feeding situations.
8 mo.	Is interested in people around him and enjoys games like "Pat-a-cake." Smiles at reflection in the mirror; shows fear and hesistation when confronted with strangers. Feeds self a cracker.
12 mo.	He is the focal point of the family; happily repeats actions and does things that arouse amusement and attention - reflects an awakening ego. Behavior patterns expressing fear and uneasiness, anger and jealousy, affection and sympathy become clearer. Cooperates in dressings. Gives toy. Finger feeds.

	PHYSICAL	
	MOTOR	VISUAL
15-18 mo.	Walks without falling; seats self; can build a tower of three cubes. Can tilt head to the side and backwards in visual pursuit. Motor drive is so strong that his eyes often seem to follow, rather than to direct, his activities. He builds towers; has difficulty arranging blocks horizontally.	Likes to throw objects and watch their visual destination. Extends objects to a person and is visually interested in fate of object. Does much listening, and listens with a far-away look as though eyes and ears shared in the act of distance projection. If he awakens at night, he quiets as he looks at the far away lights outside his window. He wants everything he sees, but his localization of far-off objects is crude; he runs toward them headlong. Shows a predilection for vertical sectors.
21 mo.	Enlarges his spatial domain by climbing on chairs, tables, and window sills.	Eyes have assumed a leading and more directive role. If he stops to stare, he freezes as though fascinated. At home he does a good deal of intensive looking, especially at household activities. Exhibits a new awareness of the fixtures of a room. Visual functions and personality reactions are akin.
2 yr.	Runs. Build tower of 6 cubes. Pulls off cap and stockings, opens boxes; unscrews lids of jars, puts pegs into holes; scribbles; draws a staight line; turns leaves of a book one at a time.	Uses eyes more flexibly; watches what he does as he does it. Gives discriminating regard to the movement of his own scribble. Eyes and hands are somewhat less associated; he can look and then act. Likes to watch movement of wheels and whirling disk of phonograph; likes to look at the moon. Increased visual discrimination is shown in fondness for small objects; dread of larger formidable objects; may even refuse to enter a large hallway. Looks for missing objects, likes to hide toys.
2½ yr.	Rather suggestible in his motor responses. May be heedless of verbal injunctions if you ask him to go from one place to another, but if you go yourself he is likely to follow. Only through continuous motor pursuit and explanation of objects does the child at this age acquire the fund of experience necessary for a more mature type of visual awareness.	Becoming aware of inevitable dualisms which disect all nature: up and down, in and out, top and bottom, etc. Eyes and intelligence do not automatically tell him which direction is right and which is wrong. He is lured by movement when it takes him into outward space; however, alarmed by movement which comes toward him. He cannot be successfully managed by direct approach; he responds to peripheral approach. Can be enticed to project his attention to a distant target. Highly dependent on manual contact; if he losses such contact with the object, he seems to lose sight of it. He may sometimes look with such overpowering intensity that his legs collapse under him.

	MENTAL	
	ADAPTIVE	LANGUAGE
18 mo.	A more advanced and effective way of exploring the properties of new objects. Discovery of new means through active experimentation. Imitates crayon strokes. Emergence of an awareness that other persons besides himself possess the function of vision.	Says two or more words; jargons; names; pictures. Begins to use the words LOOK and SEE.
2 yr.	Invention of new means through mental combinations; if no available means exists, one must be discovered. Knows the meaning of NOW and SOON; begins to use words denoting the present. Usually understand the difference between ONE and MANY.	Uses phrases; understands simple directions. Adds a few words to his vocabulary, usually nouns and verbs, a single word often serving as a sentences, such as "Eat" for "I want to ear." Comprehends simple questions; uses words in combinations such as "Water, drink;" "Baby up"; "See, clear." Vocabulary ranges from 6 to 1, 127 words - average is between 250-300 words. Gaining command of space words - WHERE. Personal pronouns appear in the order of MY, ME, YOU, I.

SOCIAL - EMOTIONAL

18 mo.	Better able to distinguish between self and others. Impatient; often does exactly the opposite of what is asked. Sudden changes seem dangerous. Defiant and disobedient and out of self-preservation rather than agression. Uses spoon with moderate spilling. Toilet trained.
2 yr.	Still occupied with self; however, people are becoming more interesting. He obeys commands willingly, and looks happy when praised. When he plays, it is only "parallel play." Verbalizes toilet needs. Plays with dolls.
2½ yr.	Rebellious age; domineering and exacting. He is bound up in his wishes, and lacking in consistency because he wants to try all the alternatives at one and the same time. The lack of ability to choose and the pull of maturity opposed actions make it almost impossible for the child to adjust his behavior.

	PHYSICAL	
	MOTOR	VISUAL
3 yr.	Stands on one foot. Builds tower of ten cubes. Large muscle activities. Goes upstairs one foot often another; learns to climb. Eye-hand activities are more unified and rounded out. Painting is confined to the paper and designs are emerging; can deploy his hands without reverting his eyes on the task.	Surveys his constructions; looks with ease from model to task. More completely oriented in a space world; displaying new interest in landmarks. He is bewildered if he meets his nursery school teacher downtown because she is dislocated and not in her accustomed locale. Interested in wholeness of things, a part of a growing esthetic sense which is based on development on the maturity of visual perception. Some 3 yr. olds show a new interest and preference for the color blue, whereas at 2½ preference was for yellow and at 2 for red.
3½ yr.	Definite increase in stumbling and a fear of high places. Hands are often tremulous and awkward. Dominance in handedness undergoes shifts and confusions. Stuttering, tensional chewing, nail biting, nosepicking, eye-blinking, increased salivation, and inexpert spitting appear on the scene, usually transiently. Difficulties are likely to bring tears when he is tired, and when he is confronted with the motor tasks of eating or dressing.	He easily loses a trail; his beginnings are better than his terminations. He does not perceive bilateral things as a whole. This is an important age for both the origin and the resolution of strabismus which has a developmental basis. Many motor difficulties stem from immature visual - motor orientations in the space - time world, which are also reflected in his emotional needs at this age. He often complains about not being able to see, as though he had difficulty in manipulating space.

	MENTAL	
	ADAPTIVE	LANGUAGE
3 yr.	Imitates a cross. Attention varies from 1-4 min.; in general from 7-20 min. Precision of concepts develops as he learns to associate the sensations of sight, touch, temperature, sound, smell, movement, and emotion with the object or event to which he is attending. Like to find out things for themselves. They remember solutions that work and those that do not Pleasant experiences seem to be remembered more easily than disagreeable ones. Can plan somewhat in advance. Begins to grasp the relation of BIG and LITTLE. Can put puzzles together.	Talks in sentences; answers simple questions. Can carry on conversation; 10-15% of conversation consists of questions. Initiates the word we. Begins using words to denote the future and the past.

	SOCIAL - EMOTIONAL
3 yr.	Negativism generally gives way to positivism. The will to cooperate is more developed. Likes to make new friends and may be willing to surrender something (a toy) to gain a person's appreciation. Outburst of anger are often aimed at objects. Fear may also be associated with particular objects; the increased power of imagination also causes fear to extend beyond reality. Begins to play with others for brief periods of time. Uses a spoon well. Puts on shoes. Takes turns.

	PHYSICAL	
	MOTOR	VISUAL
4 yr.	Skips on one foot; rides on a tricycle; enjoys playing ball; has fewer falls, bumps, etc.; sense of rhythm develops. High energy drive which results in bursts of motor activity. The visio-motor and action patterns show a certain looseness, rangeness, and spread. Home can no longer contain him. Can button his clothes and put his shoes on, but not able to tie the laces.	His motor patterns show a tendency toward symmetry which gives him an awareness of two sides of a configuration. Sometimes he even sees a circle as a divided whole, made up of two semicircles. He tends to balloon when he uses a crayon, magnifying out of proportion any detail which engages his interest. He can look both ways before crossing a street, but he is apt to dart too quickly. He likes diversities that will multiply his orientations; thus he is a great neighborhood visitor.

MENTAL

	ADAPTIVE	LANGUAGE
4 yr.	Draws "man." High energy drive which results in bubbles of mental activity Enjoys imaginative antics and flights of fable and fancy. His mental organization is fluid, yet he is able to take in a whole situation in a flash of perception. He is beginning to group large concepts like the world, the sky, the ocean.	Uses conjunctions, understands prepositions. Collective nouns and generalizing phrases emerge in his speech. Stammering most often begins at this age. HOW and WHY questions are most insistent. The pronoun I plays a very important part in his language.

SOCIAL - EMOTIONAL

4 yr.	Period of uneasiness and lack of confidence. Behavior is less harmonious. He frequently refuses to obey - exaggerated need of stubborn independence. He devotes more time to group games (social play.) Will lend his toys, but may suddenly turn cantankerous. Often eager to command others. Outbursts of undirected energy decrease in frequency, while angry retaliation increases. Frequency of after-reactions such as resentfulness and sulking increase. Can wash and dry face. Goes on errands.

	PHYSICAL	
	MOTOR	VISUAL
5 yr.	Skips on alternate feet; eye-hand coordination develops. He holds his arms nearer his body; his stance is narrow; he moves his eyes and head almost simultaneously; moves with more deliberation from one object to another; shows an increased precision and command on the use of tools. Attracted by rhythmical and other movements in groups; fine motor coordination allows him to begin using things like combs and toothbrushes.	He is not as facile with beginnings and imitations as he was at 4 yrs.; but has a better comprehension of the relationship between beginnings and ends. He prefers colored crayons to pencil, and colored picture books to black and white. He lives in the here and now; doesn't like to open strange doors; tends to manipulate space in conventional directions; operates with more facility in the vertical direction than in the horizontal; is beginning to use the word "long" in preference to the word "big" Shows a new awareness for "points" and "corners;" is more aware of longness in vertical, as opposed to oblique and horizontal. Tends to scan a page in a vertical meridian, from top to bottom and from bottom to top; likes to match form with form, size with size. These perceptual predilections are associated with the current maturity status of his ocular patterns and total action system. He singles out specific details or familiar features without losing an awareness of the total entity.

	MENTAL	
	ADAPTIVE	LANGUAGE
5 yr.	Can count ten pennies. His mental life is matter of fact and realistic. He is so occupied with the organization of an inner world of concrete perceptions that he seems somewhat impersonal. He takes up one thing at a time and does not go beyond his depth. He thinks before he speaks and acts. His mental world centers around his home and his mother is the center of that home. He usually knows the name of the street on which he lives and the house number. He picks out capital letters and numbers; he identifies letters out of a book and in store signs.	Speaks without infantile articulation. Asks WHY. His endings are definite and clear-cut. "That's all I can do." As he listens, he singles out special words in a spoken sentence and asks their meaning.

SOCIAL - EMOTIONAL

5 yr.	A happy age; likes to help about the house; is protective toward weaker or younger children. Has self-confidence combined with trust in others; more balanced emotionally. He is not stricken with fear as often and seriously as formerly, or as may happen again when he is six. The teacher may compete seriously with the parents for the child's confidence. Dresses without assistance. Asks meanings of words.

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